

CHANNEL MASTER

MANUAL NO.
8660
Supplement #1

25" COLOR TELEVISION MODELS

MODEL 6150A

MODEL 6154B

MODEL 6151A

MODEL 6155B

MODEL 6152A

MODEL 6156B

MODEL 6153A

SUPPLEMENTARY SERVICE MANUAL

The Color television chassis used for the models listed above are similar to the Color television chassis described in Manual No. 8660 except for changes in the Deflection Circuit Board, the High Voltage Board, the addition of a Pre-set Color Circuit (some models) and the listing of the "Cabinet Miscellaneous" parts list pertaining to these models.

The latest schematic diagram covering the Color television receiver together with a complete replacement parts list and the phantom views of the two new boards are also included in this manual. For all other television service information such as alignment procedures, pix tube replacement etc., refer to Manual No. 8660.

SERVICING PRECAUTIONS

WARNING: Operation of these receivers outside the cabinet or with the back removed, involves a shock hazard from the receiver power supplies. Work on the receivers should not be attempted by anyone who is not thoroughly familiar with precautions necessary when working on high voltage equipment.

CAUTION: Do not install, remove, or handle the picture tube in any manner unless shatter-proof goggles are worn. People not so equipped should be kept away while handling picture tubes. Keep picture tube away from the body while handling.

To avoid possible exposure to X-radiation and electrical shock hazard, all barriers and metal shields must be in place whenever the chassis is operating.

Using an accurate and reliable voltmeter the high voltage should be adjusted to 26,500 Volts at 120 VAC line voltage and brightness control fully counterclockwise (No Raster) for these chassis-NO HIGHER- in accordance with the Service Manual. Operation at a higher voltage may cause a failure of picture tube or the high voltage supply, and also under certain circumstances produce X-radiation in excess of design levels.

Every time a chassis is serviced, the brightness should be run up and down with a meter on the high voltage to be certain the high voltage does not exceed rated voltage.

SERVICE DEPARTMENT

CHANNEL MASTER

Division of AVNET, Inc.

ELLENVILLE N.Y. 12428

CABINET MISCELLANEOUS

Part No.	Description	Part No.	Description
	Used on Models 6150A, 6151A, 6152A, 6153A, 6154B, 6155B, 6156B,		Used on Model 6150A
4X2236-011	Trim Strip	25VBNP22	25"V Color Banded Kimcode Pix Tube
38A4200-000	Dial Assembly — VHF	25VAFP22	
38A4201-000	Dial Assembly — UHF (T563, T567 Chassis) ..	25VABP22	25"V Color Bonded Pix Tube
38A4202-000	Dial Assembly — UHF (T564, T568 Chassis) ..	25VBHP22	
10A1183-903	Knob Assembly, Brightness, Vert., Cont.	38A4504-000	Control Panel Escutcheon Assembly
10A1185-006	Knob, VHF & UHF Tuning	14X0984-002	Overlay, Speaker
10A1169-008	Knob, AFT & Fine Tuning.	N01C614B-030	Leg, Cabinet.
10A1187-032	Knob, Slide Volume	25X2838-001	Mounting Bracket, Leg
10A1187-019	Knob, Slide Color	79X0163-001	Foot, Plastic (Cab't.)
10A1187-020	Knob, Slide Tint		Used on Model 6151A
50A2020-021	Antenna Block Twin Lead Assembly	14X0984-003	Overlay, Speaker
4X2154-015	Insert, Secondary Ind. Strip (B-V-C).		Used on Model 6152A
4X2021-020	Insert, Channel Master	14X0984-004	Overlay, Speaker
	Used on Models 6151A, 6152A, 6153A, 6154B, 6155B, 6156B	N974-K13421	Decorative Pull
10A1204-001	Knob, Pre-Set Color Switch	Windsor Ant'q.	} (Cab't. Base Area) .
	Used on Models 6150A, 6151A, 6152A, 6153A,	303X1518-026	
4X2220-019	Pix Mask		Used on Model 6153A
12A0654-001	4" x 6" PM Speaker	14X0984-005	Overlay, Speaker
14X0980-001	Cabinet Back — Less Tube Cover		Used on Model 6154B
57X0275-001	Tube Cover	K12278	Decorative Key Plate
	Used on Models 6150A, 6151A, 6152A, 6153A	Eng. Ant'q.	
25VABP22	25"V Color Bonded Pix Tube	29X0710-006	Escutcheon Pin (Used w/Key Plate)
	Used on Models 6151A, 6152A, 6153A	N962-4360	Decorative Pull (Cab't. Door)
38A4506-000	Control Panel Escutcheon Assembly	Eng. Ant'q.	
	Used on Models 6154B, 6155B, 6156B	303X1507-319	Screw (Used w/Pull)
25VACP22	25"V Color Banded Kimcode Pix Tube		Used on Model 6155B
25VABP22	25"V Color Bonded Pix Tube	N2401	
4X2220-020	Pix Mask	Stock Bridge	Decorative Pull
38A4507-000	Control Panel Escutcheon Assembly	w/Specs	} (Cab't. Door)
12A0657-001	4" x 6" PM Speaker	303X1518-310	
14X0980-002	Cabinet Back — Less Tube Cover	N4037	
57X0275-001	Tube Cover	Stock Bridge	Decorative Pull
7499SBX2-0C	Caster (Cabinet)	w/Specs	
RSA12988-RP	Bracket, Caster	K10728	Stud
4630		K10729	Clip
3914, 4201	} Strike & Catch (Cab't. Door)		Used on Model 6156B
Stat. Bronze		N2355	
9010-29	} Hinge, Door (Right Side, Upper & Lower)	Eng. Ant'q.	Decorative Pull
Stat. Bronze		303X1518-311	} (Cab't. Door)
25X2852-001	Bracket, Door Stop		
			Screw (Used w/Pull) ...

SEALED CIRCUIT ASSEMBLIES - PHANTOM VIEWS

38A4128-000 (P157) HIGH VOLTAGE PW900 COMPONENT LOCATION GUIDE

C901 C4
C903 A4
C904 B3
C905 B3
C906 B3
C907 A4
C908 A3
C909 C4

J901 A4
J902 A1
J903 B1

L902 B3

R901 B3
R902 .PTT901
R903 B4

R904 B4
R905 A4
R906 B3
R907 B3
R908 C4
R909 A3
R910 A3
R911 A3
R912 A4

RV901 . . . B3

SE901 . . . B3

T901 A1

V901 C3

V902 A4

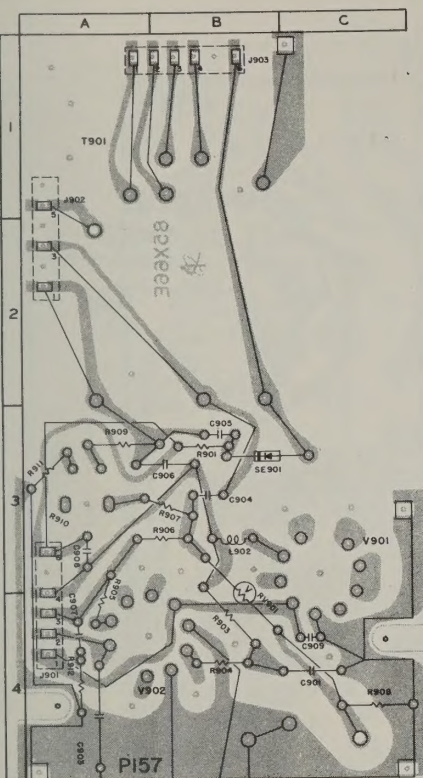


Figure 27 - PW900 High Voltage

(P159) FOCUS PART OF PW900

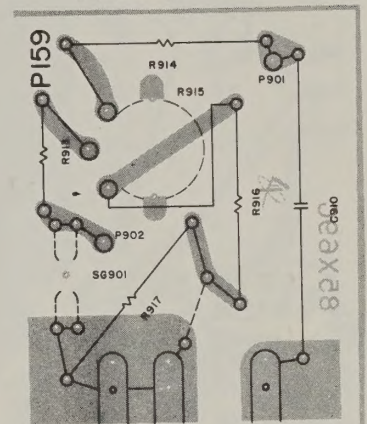


Figure 28 - Focus

NOTE: Symbols P901, J901, P902 & J902 appear on both the P159 focus board and the P157 H.V. board assys. and schematic.

NOTE - USED ON CHASSIS STAMPED T5001.

SEALED CIRCUIT ASSEMBLIES – PHANTOM VIEWS

38A4471-000 (P183) HIGH VOLTAGE PW900 COMPONENT LOCATION GUIDE

C901 C4
C903 A4
C904 B3
C905 B3
C906 B3
C907 C3
C908 A3
C909 C4

J901 A4
J902 A1
J903 B1

L902 B3

R901 B3
R902 .PT.T901
R903 B4

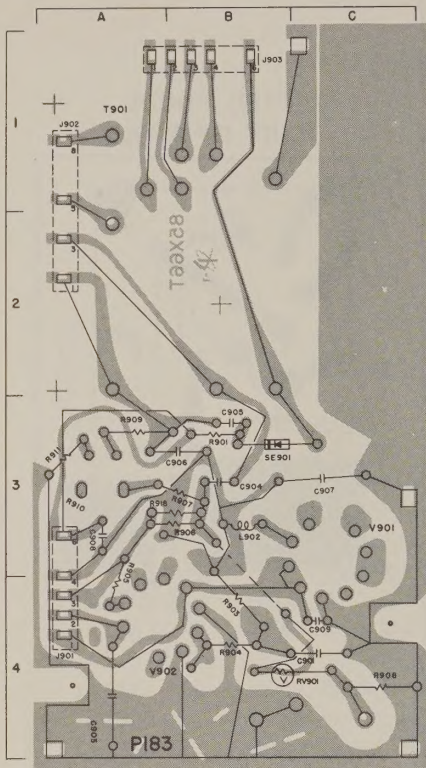
R904 B4
R905 A4
R906 B3
R907 B3
R908 C4
R909 A3
R910 A3
R911 A3
R918 B3

RV901 . . . C4

SE901 . . . B3

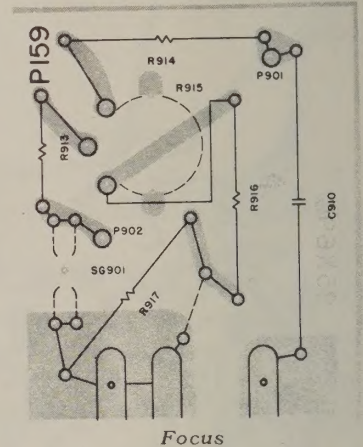
T901 A1

V901 C3
V902 A4



PW900 High Voltage

(P159) FOCUS PART OF PW900



NOTE: Symbols P901, J901, P902 & J902 appear on both the P159 focus board and the P183 H.V. board assys. and schematic.

PRE-SET COLOR CONTROL (PUSH ON-PUSH OFF)

Models having "PRE-SET COLOR" feature provide a user operated "push-push" switch on the front panel which when pushed to the "ON" position illuminates the actuator button, provides pre-set color intensity and tint and utilizes additional electronic circuitry to enhance "flesh" tones. These controls have been pre-set and adjusted at the factory to provide a correct color picture using a recognized standard signal and transmission.

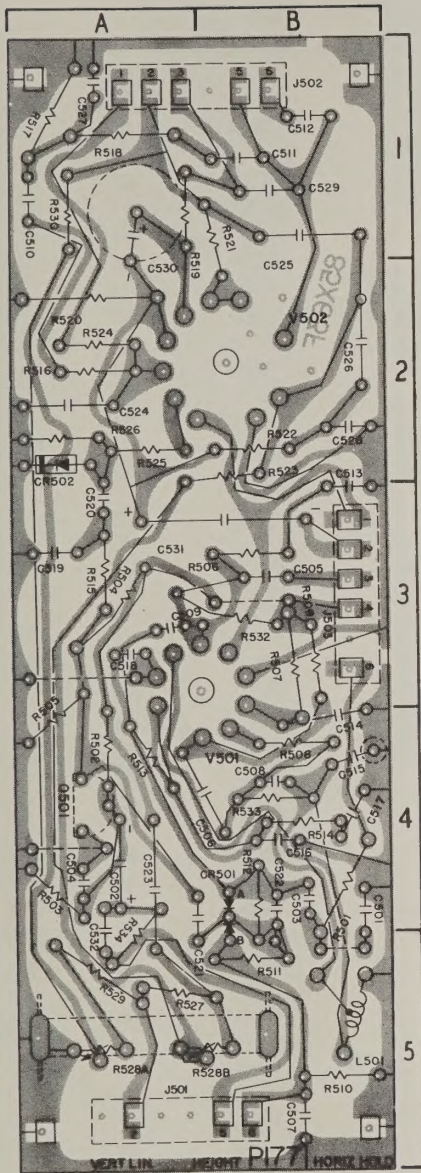
NOTE: When this feature is in the "ON" position (lighted), the "COLOR" and "TINT" slide controls on the front panel are made inoperative and will have no effect on picture reception.

However, if the pre-set level of color and tint are not to customer liking, adjust the pre-set Color and Tint controls (located below the antenna terminals on rear of set) to customer preference. These adjustments must be made with the Pre-Set Color switch in the "ON" (lighted) position.

NOTE – USED ON CHASSIS STAMPED T5002.

SEALED CIRCUIT ASSEMBLIES

38A4342-000 (P177) DEFLECTION PW500 COMPONENT LOCATION GUIDE

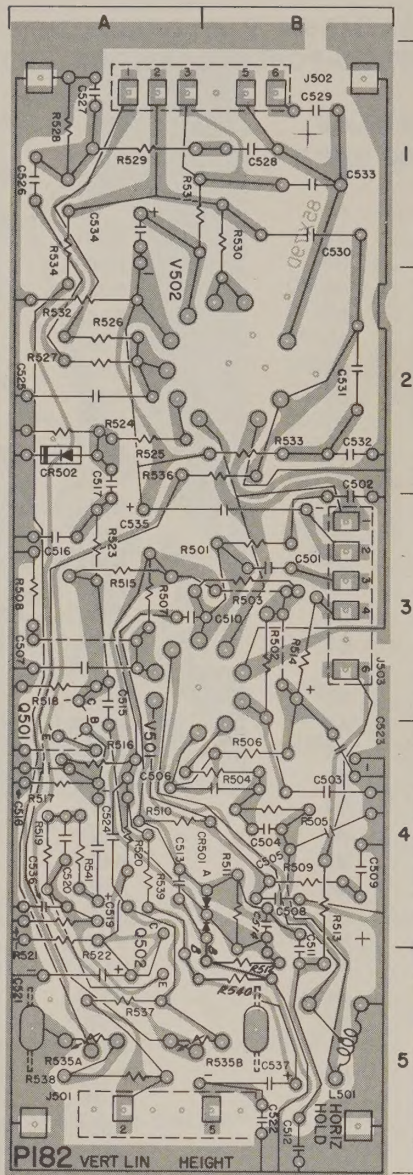


PW500 Deflection

C501 B4	L501 B5
C502 A4	
C503 B4	Q501 A4
C504 A4	
C505 B3	R501 B4
C506 B4	R502 A4
C507 B5	R503 A4
C508 B4	R504 A3
C509 A3	R505 A4
C510 A1	R506 B3
C511 B1	R507 B3
C512 B1	R508 B4
C513 B3	R509 B3
C514 B4	R510 B5
C515 B4	R511 B5
C516 B4	R512 B4
C517 B4	R513 A4
C518 A3	R514 B4
C519 A3	R515 A3
C520 A3	R516 A2
C521 A4	R517 A1
C522 B4	R518 A1
C523 A4	R519 A1
C524 A2	R520 A2
C525 B1	R521 B1
C526 B2	R522 B2
C527 A1	R523 B2
C528 B2	R524 A2
C529 B1	R525 A2
C530 A1	R526 A2
C531 B3	R527 A5
C532 A5	R528 A,B . A5
CR501 . . . B4	R529 A5
CR502 . . . A2	R530 A1
	R532 B3
J501 A5	R533 B4
J502 B1	R534 A5
J503 B3	V501 B4
	V502 B2

NOTE – USED ON CHASSIS STAMPED T5001.

SEALED CIRCUIT ASSEMBLIES



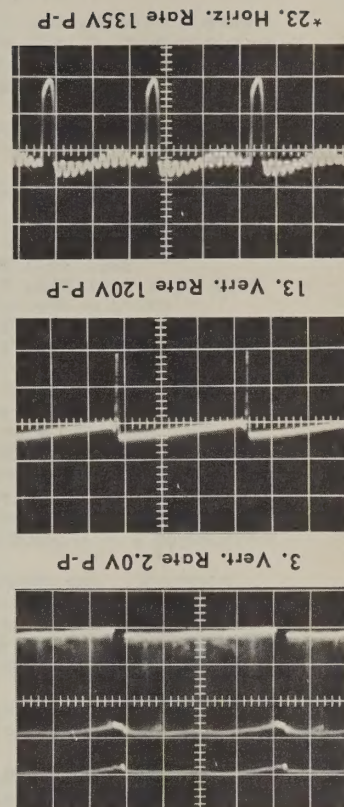
PW500 Deflection

38A4470-000 (P182) DEFLECTION PW500 COMPONENT LOCATION GUIDE

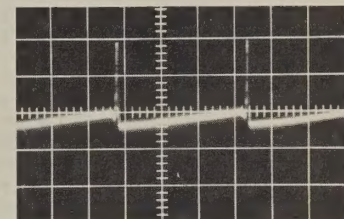
C501	B3	Q501	A4
C502	B2	Q502	A4
C503	B4	R501	B3
C504	B4	R502	B3
C505	B4	R503	B3
C506	B4	R504	B4
C507	A3	R505	B4
C508	B4	R506	B4
C509	B4	R507	A3
C510	B3	R508	A3
C511	B4	R509	B4
C512	B5	R510	B4
C513	A4	R511	B4
C514	B4	R512	B5
C515	A3	R513	B4
C516	A3	R514	B3
C517	A2	R515	A3
C518	A4	R516	A4
C519	A4	R517	A4
C520	A4	R518	A3
C521	A5	R519	A4
C522	B5	R520	A4
C523	B4	R521	A4
C524	A4	R522	A4
C525	A2	R523	A3
C526	A1	R524	B2
C527	A1	R525	A2
C528	B1	R526	A2
C529	B1	R527	A2
C530	B1	R528	A1
C531	B2	R529	A1
C532	B2	R530	B1
C533	B1	R531	B1
C534	A1	R532	A2
C535	B3	R533	B2
C536	A4	R534	A1
C537	B5	R535A	A5
CR501	B4	R535B	B5
CR502	A2	R536	B2
J501	A5	R537	A5
J502	B1	R538	A5
J503	B3	R539	A4
		R540	B5
L501	B5	R541	A4
		V501	A4
		V502	A2

NOTE – USED ON CHASSIS STAMPED T5002.

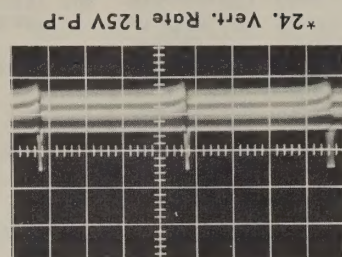
CHASSIS VO

[illegible]

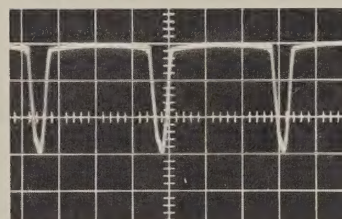
*23. Horiz. Rate 135V P-P



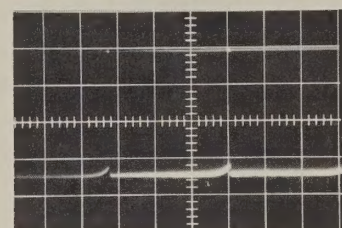
13. Vert. Rate 120V P-P



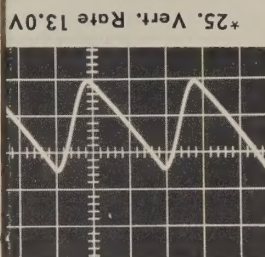
*24. Vert. Rate 125V P-P



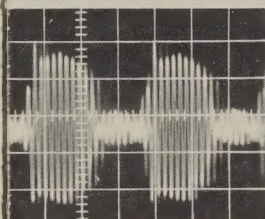
14. Horiz. Rate 300V P-P



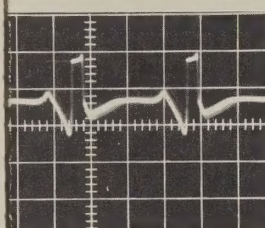
4. Horiz. Rate 34V P-P



*25. Vert. Rate 13.0V

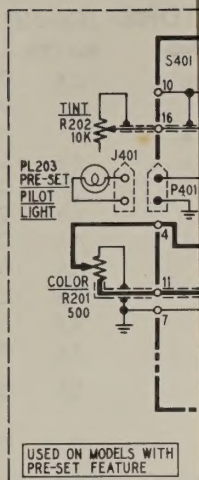


15. Horiz. Rate 2.4V

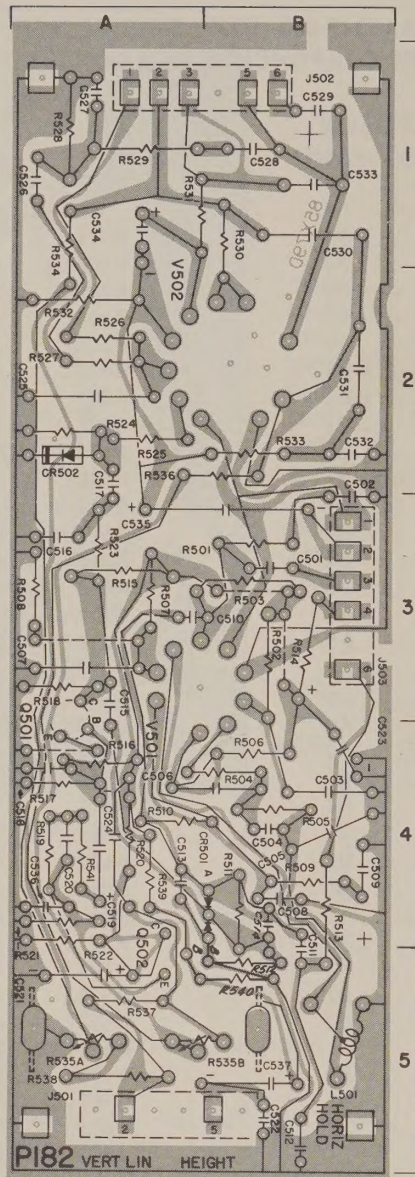


5. Horiz. Rate 11.5V

*NOTE: VOLTAGE WAVEFORMS TAKEN WITH A
TAKEN USING A STRONG TEST PATTERN SIGNAL



SEALED CIRCUIT ASSEMBLIES

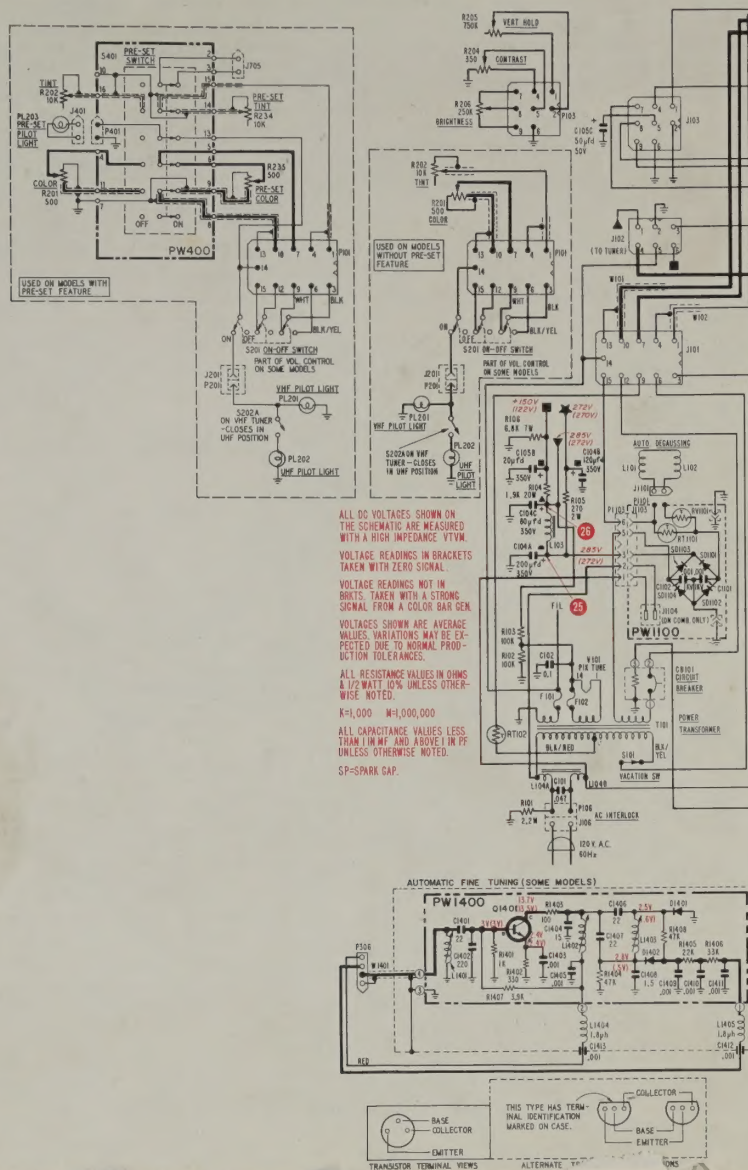


PW500 Deflection

38A4470-000 (P182) DEFLECTION PW500 COMPONENT LOCATION GUIDE

C501	B3	Q501	A4
C502	B2	Q502	A4
C503	B4	R501	B3
C504	B4	R502	B3
C505	B4	R503	B3
C506	B4	R504	B4
C507	A3	R505	B4
C508	B4	R506	B4
C509	B4	R507	A3
C510	B3	R508	A3
C511	B4	R509	B4
C512	B5	R510	B4
C513	A4	R511	B4
C514	B4	R512	B5
C515	A3	R513	B4
C516	A3	R514	B3
C517	A2	R515	A3
C518	A4	R516	A4
C519	A4	R517	A4
C520	A4	R518	A3
C521	A5	R519	A4
C522	B5	R520	A4
C523	B4	R521	A4
C524	A4	R522	A4
C525	A2	R523	A3
C526	A1	R524	B2
C527	A1	R525	A2
C528	B1	R526	A2
C529	B1	R527	A2
C530	B1	R528	A1
C531	B2	R529	A1
C532	B2	R530	B1
C533	B1	R531	B1
C534	A1	R532	A2
C535	B3	R533	B2
C536	A4	R534	A1
C537	B5	R535A	A5
CR501	B4	R535B	B5
CR502	A2	R536	B2
J501	A5	R537	A5
J502	B1	R538	A5
J503	B3	R539	A4
		R540	B5
		R541	A4
L501	B5		
		V501	A4
		V502	A2

NOTE — USED ON CHASSIS STAMPED T5002.



R201		Used on Models	T513 - T514 - T515 - T516 - T563, T564 - T565 - T566 - T567 - T568
		40X0620-002	500 Color Control, Slide
R202		Used on Models	T513 - T514 - T515 - T516 - T563, T564 - T565 - T566 - T567 - T568
		40X0620-001	10K Tint Control, Slide
R201		Used on Models	T521 - T522 - T551 - T552, T553 - T554
R202		78X0057-007	10K Tint Control 500 Chroma Control

R203	{	Used on Models T513 - T514 - T515 - T516 - T563,
		T564 - T565 - T566 - T567 - T568
	40X0620-003	1 Meg. Volume Control, S
R203	{	Used on Models T521 - T522 - T551 - T552,
S201		T553 - T554
	78X0064-001	1 Meg. Volume Control

S201 Used on Models T513 - T514 - T515 - T516, T517
38A4245-000 Bracket & Switch Ass'y.
Used on Models T513 - T564 - T565 - T566 - T567 - T568
38A4386-000 On-Off Switch & Cap Ass'y.

S203 Used on Models T513 - T514 - T515 - T516 - T563 - T564 - T565 - T566 - T567 - T568
38A4431-000 AFT Switch & Gear Ass'y.
Used on Models T521 - T522
2A0611-001 AFT Switch

PILOT LIGHT SOCKETS FOR VARIOUS MODELS

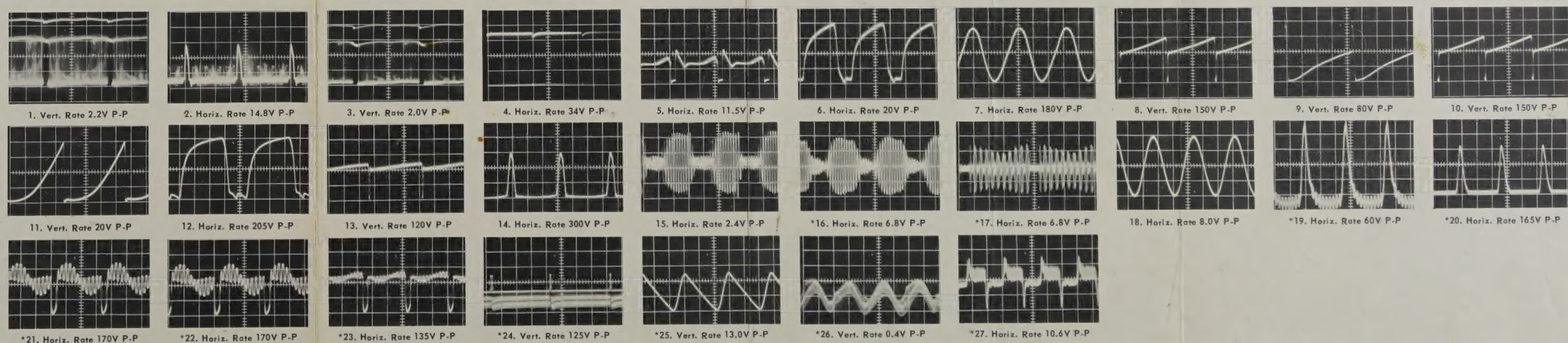
Used on Models T513 - T514 - T515 - T516 - T563,
T564 - T565 - T566 - T567 - T568

7A0317-001 VHF Pilot Light (PL201)
7A0317-002 UHF Pilot Light (PL202)

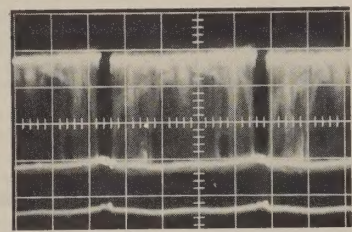
Used on Models T521 - T522 - T551 - T552 - T553 - T554

7A0337-001 VHF Pilot Light (PL201)
7A0338-001 UHF Pilot Light (PL202)

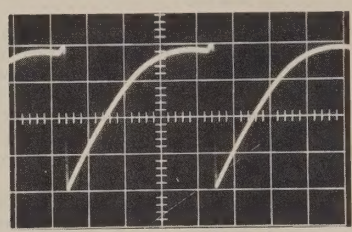
CHASSIS VOLTAGE WAVEFORMS



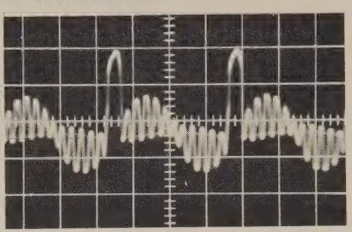
NOTE: VOLTAGE WAVEFORMS TAKEN WITH A WIDEBAND OSCILLOSCOPE USING A LOW CAPACITANCE PROBE. ALL WAVEFORMS TAKEN USING A STRONG TEST PATTERN SIGNAL EXCEPT THOSE MARKED WITH AN () TAKEN WITH A COLOR BAR GENERATOR.



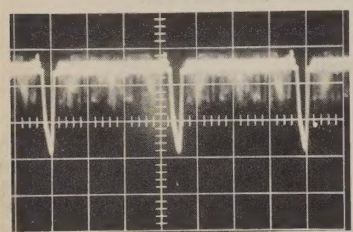
1. Vert. Rate 2.2V P-P



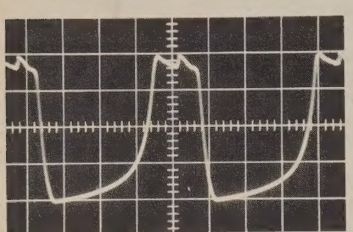
11. Vert. Rate 20V P-P



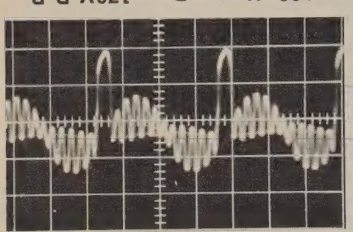
*21. Horiz. Rate 170V P-P



2. Horiz. Rate 14.8V P-P



12. Horiz. Rate 205V P-P



*22. Horiz. Rate 170V P-P

- | | | | |
|----------------|---|-------------|------|
| Used on Models | { | 78X0057-007 | R201 |
| | | | R202 |
| Used on Models | { | 40X0620-001 | R202 |
| | | | |
| Used on Models | { | 40X0620-002 | R201 |
| | | | |

CHANNEL MASTER

MANUAL NO.
8660

25" COLOR TELEVISION MODELS

MODEL 6106

MODEL 6121

MODEL 6107

MODEL 6122

MODEL 6111

MODEL 6123

MODEL 6119

MODEL 6124

SERVICING PRECAUTIONS

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CAUTION: Do not install, remove, or handle the picture tube in any manner unless shatter-proof goggles are worn. People not so equipped should be kept away while handling picture tubes. Keep picture tube away from the body while handling.

To avoid possible exposure to X-radiation and electrical shock hazard, all barriers and metal shields must be in place whenever the chassis is operating.

Using an accurate and reliable voltmeter the high voltage should be adjusted to 25,000 Volts at 120 VAC line voltage and brightness control fully counterclockwise (No Raster) for these chassis-NO HIGHER- in accordance with the Service Manual. Operation at a higher voltage may cause a failure of picture tube or the high voltage supply, and also under certain circumstances produce X-radiation in excess of design levels.

Every time a chassis is serviced, the brightness should be run up and down with a meter on the high voltage to be certain the high voltage does not exceed rated voltage.

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MODEL 6150A MODEL 6154B
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SERVICE DEPARTMENT

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ELLENVILLE, N.Y. 12428

REPLACEMENT PARTS LIST

NOTICE

All Models use Chassis T5001-2 Series (Stamped on Chassis Rear Apron). Various Model Make-ups (such as T511, T523, T542, etc.) are different only in the Tuners, User Controls, Switches and associated components. This identification is stamped on the Tuner Mounting Bracket. These parts, all of which are reference numbers 200 Series (R201-C204, etc.) Schematic identification are listed below Schematic Diagram.

The Replacement Parts List in this manual indicates parts which are common to all chassis and also parts which are applicable to each chassis. When ordering replacement parts from the manual be sure to check the stamping located on Tuner Mounting Bracket for the correct chassis designation.

CAPACITORS				CAPACITORS - (Cont'd.)			
REF. NO.	PART NO.	CAPACITY		REF. NO.	PART NO.	CAPACITY	
C101	46X0534-002	.047mf	Special	C326	80X0099-049	220p	N1500 500V Ceramic
C102	342X1044-060	1mf	600V Mylar	C329	80X0099-054	2.2kf ZSF	500V Ceramic
C104		200mf		C330	80X0099-052	560pf $\pm 5\%$ N1500	500V Ceramic
C104B	45X0536-001	120mf	350V Electrolytic	C331	Part of 9A2667-003		
C104C		80mf	350V	C332	80X0099-088	5pf NPO	500V Ceramic
C104D		5mf	50V	C334	80X0099-048	100pf N33	500V Ceramic
C105A		25mf	350V	C336	349X1042-109	1mf	100V Mylar
C105B	45X0539-001	20mf	350V Electrolytic	C337	343X1842-049	.18mf	400V Mylar
C105C		50mf	50V	C338	80X0099-023	390pf ZSF	500V Ceramic
C106	80X0096-029			C339	80X0099-047	1kf ZSF	500V Ceramic
C107	342X1842-020	.18mf	200V Mylar	C340	47X0564-000	1kf ZSU	500V Ceramic
C108	80X0098-024	100pf	3KV Ceramic	C341	47X0564-000	1kf $\pm 5\%$ NPO	Ceramic Tubu
C109	45X0534-002	5mf	10VNP Electrolytic	C501			
C220	80X0001-000	.01mf	500V Ceramic	C512	80X0099-036	4700pf ZSF	500V Ceramic
C237	TS1 (1) T56 (1)	Only	Used on Tuner with Assembly Stamped	C502	80X0099-042	220pf N750	500V Ceramic
C301	80X0099-035	6.8kf GMV	500V Ceramic	C503	343X7434-049	.047mf	400V Mylar
C302	80X0099-035	.01mf ZSF	2KV Ceramic	C504	80X0099-003	.01mf ZSF	500V Ceramic
C303	80X0099-061	.01mf ZSU	1KV Ceramic	C505			
C306				C506	46X0535-002	560pf	500V Polystyrene
C309	80X0099-002	.01mf ZSU	500V Ceramic	C507	45X05105-008	10mf	10V Electrolytic
C312				C508	80X0099-054	2200pf ZSF	500V Ceramic
C313				C532			
C304	Part of 9A2669-001			C533	343X7434-029	.047mf	200V Mylar
C305	343A4734-029	960pf	200V Mylar	C510	80X0099-020	100pf ZSF	500V Ceramic
C308	80X0099-012	500pf ZSF	500V Ceramic	C511	80X0099-021	820pf ZSF	500V Ceramic
C319				C513	80X0099-020	680pf ZSF	500V Ceramic
C324				C514			
C327				C515	80X0099-086	560pf $\pm 5\%$ NPO	500V Ceramic
C328				C517	343X1032-049	.01mf	400V Mylar
C333	80X0099-008	.001mf ZSU	500V Ceramic	C518	80X0099-076	100kf XSF	500V Ceramic
C340				C519			
C341				C527	45X0515-002	1mf	15V Electrolytic
C342				C520	80X0099-017	30pf ZSU	500V Ceramic
C343				C521	45X0510-017	50V	Electrolytic
C344				C522	80X0099-012	560pf ZSF	500V Ceramic
C345				C523	45X0540-001	30mf	350V Electrolytic
C310	Part of 9A2658-001			C534			
C311	80X0099-096	750pf $\pm 5\%$ N2200	500V Ceramic	C535	343X1544-060	0.15mf	600V Mylar
C313	Part of 9A2697-001			C526	46X05305-003	2200pf	630V Polystyrene
C314	80X0099-096	100pf NPO	500V Ceramic	C527	80X0099-036	.01mf ZSF	1KV Ceramic
C315	47X0566-000	500pf $\pm 5\%$ N3300	500V Ceramic Tubu	C528	80X0099-015	100pf ZSF	500V Ceramic
C316	47X0777-000	0.47pf	500V Molded	C529	80X0099-061	.01mf ZSU	1KV Ceramic
C317	17A2079-002	3.15pf	500V Trimmer	C530	343X1042-069	0.1mf	600V Mylar
C318	80X0099-050	150pf $\pm 5\%$ NPO	500V Ceramic	C531	343X7432-069	.047mf	600V Mylar
C320	80X0099-050	100pf	100V Mylar	C532	80X0099-015	100pf ZSF	500V Ceramic
C321	349X1032-109	.01mf	100V Mylar	C535	45X05105-019	50mf	5V Electrolytic
C322	80X0099-051	680pf N2200	500V Ceramic	C536	80X0099-121	100pf $\pm 5\%$ NPO	500V Ceramic

TO AVOID DELAY WHEN ORDERING PARTS PLEASE INCLUDE: MODEL & PART NOS.

CHANNEL MASTER

MANUAL NO.
8660

25" COLOR TELEVISION MODELS

MODEL 6106

MODEL 6121

MODEL 6107

MODEL 6122

MODEL 6111

MODEL 6123

MODEL 6119

MODEL 6124

SERVICING PRECAUTIONS

WARNING: Operation of these receivers outside the cabinet or with the back removed, involves a shock hazard from the receiver power supplies. Work on the receivers should not be attempted by anyone who is not thoroughly familiar with precautions necessary when working on high voltage equipment.

CAUTION: Do not install, remove, or handle the picture tube in any manner unless shatter-proof goggles are worn. People not so equipped should be kept away while handling picture tubes. Keep picture tube away from the body while handling.

To avoid possible exposure to X-radiation and electrical shock hazard, all barriers and metal shields must be in place whenever the chassis is operating.

Using an accurate and reliable voltmeter the high voltage should be adjusted to 25,000 Volts at 120 VAC line voltage and brightness control fully counterclockwise (No Raster) for these chassis-NO HIGHER- in accordance with the Service Manual. Operation at a higher voltage may cause a failure of picture tube or the high voltage supply, and also under certain circumstances produce X-radiation in excess of design levels.

Every time a chassis is serviced, the brightness should be run up and down with a meter on the high voltage to be certain the high voltage does not exceed rated voltage.

IMPORTANT **INSTRUCTIONS FOR USE OF VARIOUS NUMBER BOARDS**

Each board is identified by "P" number indicated on the board. "38A" part number is also listed here for identification with the Service Manual Parts List.

- | | |
|---|---|
| <p>P169 (38A4293-000) chroma board with "Tint Modifier" can be used for P155 (38A4126-000). Leave tint cable pins unconnected (P705).</p> <p>P155 (38A4126-000) chroma board cannot be used for P169 if T.V. model uses tint control switch.</p> <p>P177 (38A4342-000) deflection board may be used with either P176 (38A4341-000) or P154 (38A4124-000) pix sound board.</p> | <p>P176 (38A4341-000) pix sound board <u>must be used</u> P177 (38A4342-000) deflection board.</p> <p>P176 (38A4341-000) pix sound board <u>may be used</u> with P156 (38A4127-000) deflection board with <u>following change on P176</u>: C321 - change from .01 MFD to .22 MFD - 100 volt rating or higher.</p> |
|---|---|

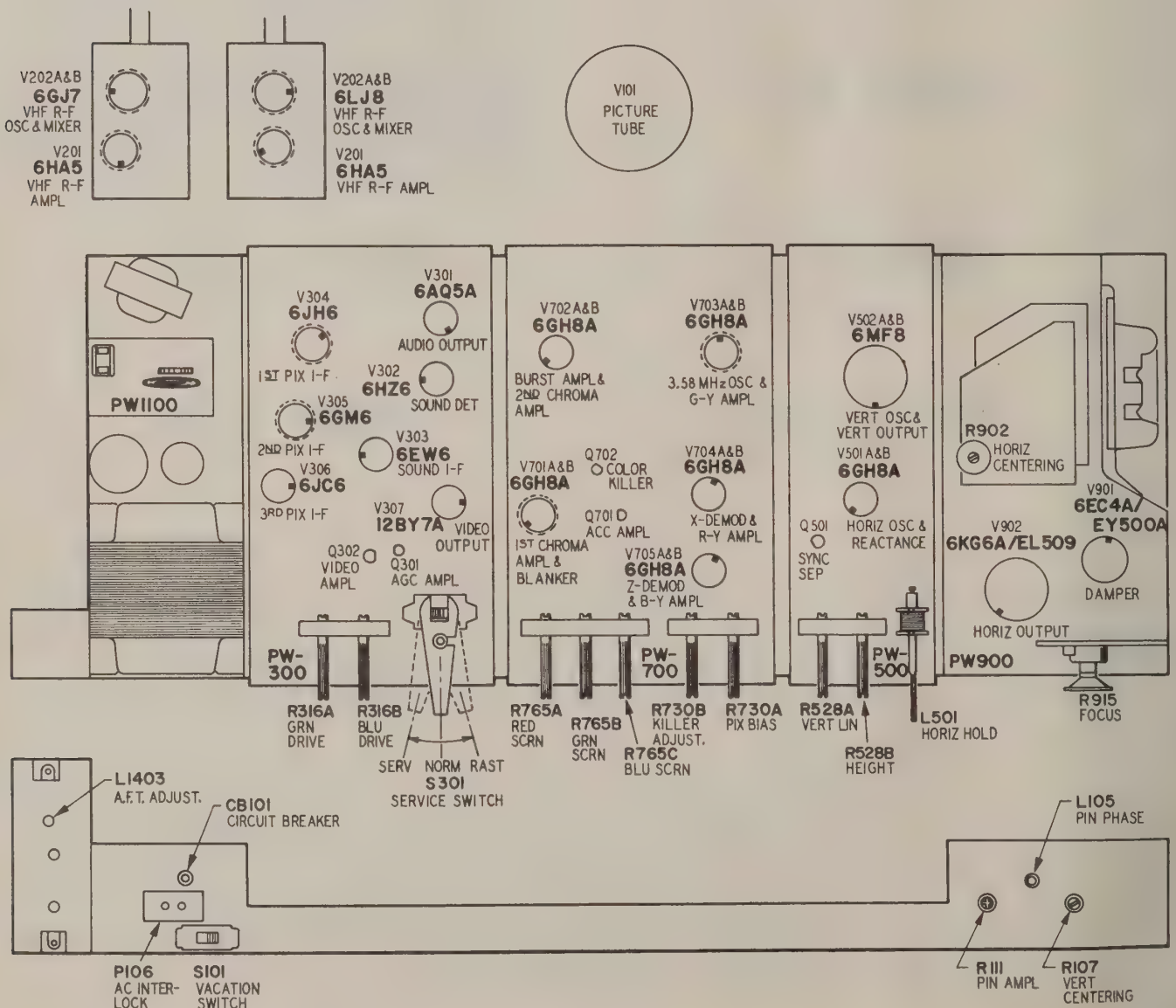


Figure 1 - Tube Layout & Rear Chassis Adjustments

NOTICE

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TUBE & TRANSISTOR COMPLEMENT

V-101	See Note.	Picture Tube
V-301	6AQ5A	Audio Output
V-302	6HZ6	Sound Det.
V-303	6EW6	Sound I-F
V-304	6JH6	1st Pix I-F
V-305	6GM6	2nd Pix I-F
V-306	6JC6	3rd Pix I-F
V-307	12BY7A	Video Output
V-501 A & B	6GH8A	Horiz. Osc. and Reactance
V-502 A & B	6MF8	Vert. Osc. and Vert. Output
V-701 A & B	6GH8A	1st Chroma Amp. and Blanker
V-702 A & B	6GH8A	Burst Amp. and 2nd Chroma Amp
V-703 A & B	6GH8A	3.58 MHz Osc. and G-Y Amp.
V-704 A & B	6GH8A	X-Demodulator and R-Y Amp.
V-705 A & B	6GH8A	Z-Demodulator and B-Y Amp.
V-901	6EC4A/EY500	Damper
V-902	6K6A/EL-509	Horiz. Output

TRANSISTORS

Q-301	86X0006-001	(SE1002)	..AGC Amp.
Q-302	86X0034-001	(Special)	..Video Amp.
Q-501	86X0035-001	(Special)	..Sync. Sep.
Q-701	86X0045-001	(Special)	..ACC Amp.
Q-702	86X0044-001	(2N5087)	..Color Killer
Q-1401	86X0038-001	SE5025)	..Auto. Fine Tuning Amp.

NOTE - For specific picture tube type for each Model
See Cabinet Miscellaneous List on inside of
back cover.

ELECTRICAL SPECIFICATIONS TV

ANTENNA INPUT IMPEDANCE... 300 ohms balanced
AUDIO POWER OUTPUT RATING... 1.5 watts max.
INTERMEDIATE FREQUENCIES

Picture I-F Carrier Frequency	45.75 mc.
Sound I-F Carrier Frequency	41.25 mc.
Color Sub-Carrier Frequency	(Nominal) 42.17 mc.
PICTURE SIZE 23" Pix Tube Approx.	295 sq. in.
PICTURE SIZE 25" Pix Tube Approx.	315 sq. in.
POWER INPUT	120 volts AC, 60 Hz
POWER RATING	315 watts (TV)
SPEAKER SIZE AND TYPE	See Parts List

TELEVISION R-F FREQUENCY RANGE

Any of 70 UHF Channels 470 mc. to 890 mc.
Any of 12 VHF Channels 54mc.to88mc.,164mc.to 216mc.

TUNERS

25A1282-001 thru -004 VHF Tuner (Standard Kollsman)
V-201 6HA5.....VHF R-F Amp.
V-202 A & B 6GJ7.....Mixer and R-F Osc.

25A1283-001 thru -004.. VHF Tuner (Sarkes Tarzian)
V-201 6HA5.....VHF R-F Amp.
V-202 A & B 6LJ8.....Osc. and Mixer

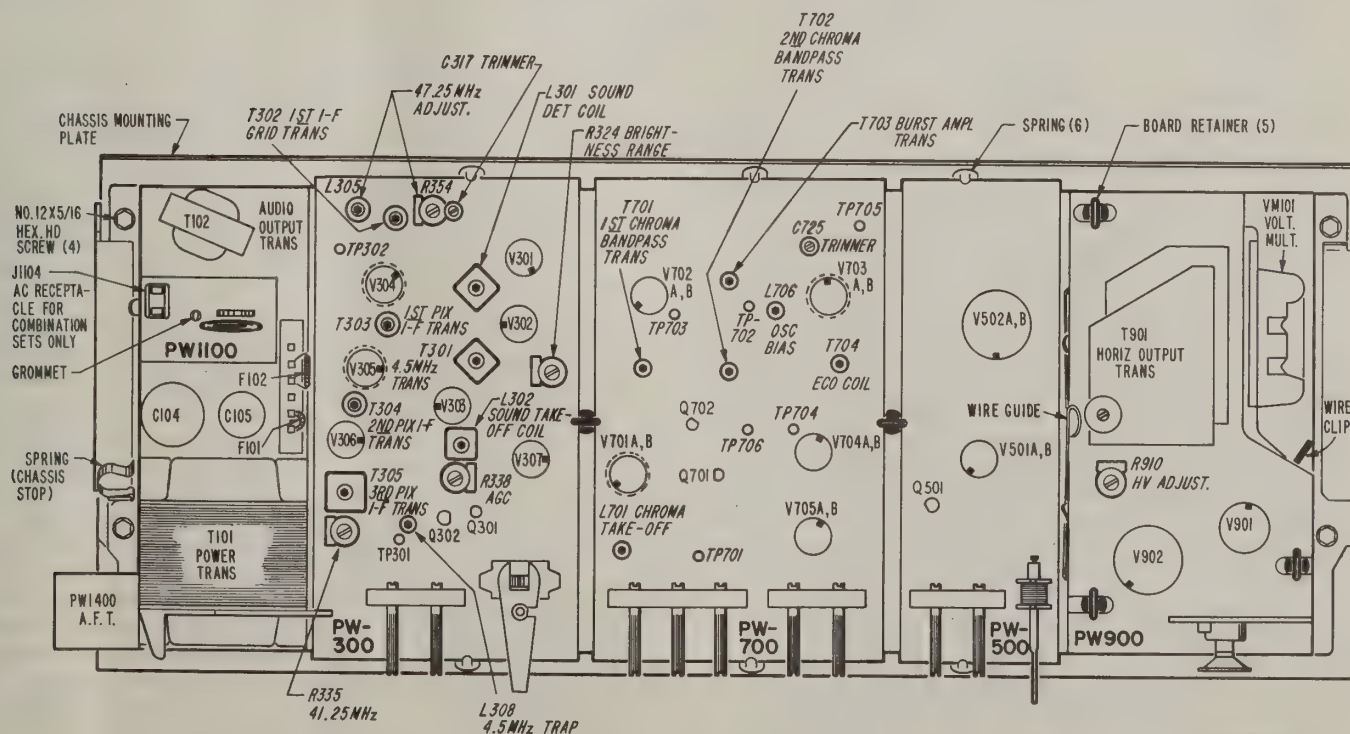


Figure 2 – Alignment and Test Locations

***In later production only 2 screws at rear are used for mounting chassis to the chassis retainer bracket.**

SERVICE ADJUSTMENTS

NEW COLOR INSTRUMENTS

Color Television instruments leaving the factory are adjusted by experts in the set-up of color receivers. Color, temperature, purity and convergence should not be affected by normal handling of a receiver in its original packing. Thus, a minimum of set-up should be required.

Check for black and white picture (Color Temperature). Check the horizontal adjustment, focus, vertical linearity, height and horizontal and vertical centering. Observe the picture for good black and white reproduction over the entire screen area. No objectionable color shading should be evident.

IMPORTANT: Instruments should be at room temperature, approximately 70°F. for at least two hours before any set-up adjustments are performed. Instruments must be operated at least ten minutes at full beam current (brightness full without bloom) before purity or convergence adjustments are attempted.

EXTERNAL ANTENNA CONNECTIONS

When using a UHF or VHF antenna only, or both, connect the transmission line(s) to the proper antenna terminals at the rear of the receiver.

When a combination UHF/VHF antenna is to be used, having a single transmission line, a stub arrangement, such as is shown in Fig. 3, may be used to match single transmission line to the two receiver inputs if a coupler is not provided with the antenna.

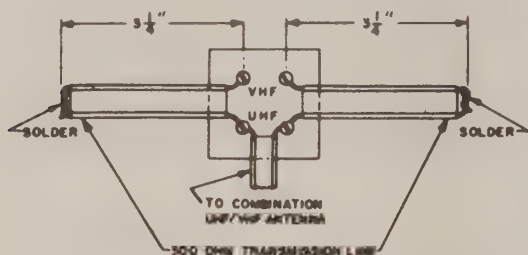


Figure 3.—Combination UHF/VHF Antenna Matching

DEGAUSSING

All instruments are equipped with an automatic degaussing circuit which effectively demagnetizes the picture tube each time the receiver is turned on. The degaussing circuit will operate any time the set is turned on after having been off for at least five minutes. The degaussing effect is confined to the picture tube since the coils are mounted on the ferrous tube shield. Should any part of the chassis or cabinet become magnetized, it will be necessary to degauss the affected area by means of a manual degaussing coil. Move the coil slowly around the parts to be demagnetized, then slowly withdraw for a distance of six feet before disconnecting the coil from the AC power supply. Automatic degaussing action may be checked by jumpering RT1101 before instrument turn on. Degaussing effect will be observed on the screen when the jumper is removed after the receiver is operating.

LOW VOLTAGE CIRCUIT PROTECTION

A reset-type of circuit breaker is incorporated in the low voltage power supply. The circuit breaker is mounted on the rear apron of the chassis as shown in Fig. 1. To reset the breaker, push the red button all the way "in" and release. The breaker resets as the button reaches the outer position.

VERTICAL LINEARITY, HEIGHT AND CENTERING ADJUSTMENTS

Adjust the Vertical Linearity Control (R528A), the Height Control (R528B), the Vertical Centering Control (R107), and the Horizontal Centering Control (R902), until the picture or test pattern is centered and symmetrical from top to bottom. Make the final adjustment to just fill the mask at both top and bottom.

FOCUS

Adjust the focus (R915) at the rear of the chassis for maximum overall definition of fine picture detail.

A. G. C. ADJUSTMENT

Turn the A.G.C. control clockwise until the picture begins to bend or otherwise distort, and then retard the control slightly below the point where the distortion is eliminated. Change channels and observe the A.G.C. performance on a strong, local broadcast. Retard the A.G.C. control again if the picture does not immediately reappear when changing channels. For precise adjustment of A.G.C. connect the oscilloscope probe to the picture detector output (test point TP301 on PW300) and adjust for the point where the horizontal sync pulses are just beginning to clip while tuned to a strong, local broadcast. See schematic for location of TP301.

CHECK OF VHF R-F OSCILLATOR ADJUSTMENTS

Tune in all available stations to see that the receiver R-F Oscillator is adjusted to the proper frequency on all active channels.

All models incorporate the "One-Set" fine tuning feature which requires the following procedure for oscillator adjustment.

Turn channel selector to desired channel with AFT off, turn the fine tuning control for best picture color and sound. Under normal operation no further adjustment is required.

AUTOMATIC FINE TUNING CUSTOMIZING

The A.F.T. (Automatic Fine Tuning) circuits are critically and precisely aligned at the factory to produce a correctly tuned picture under normal conditions of signal pick-up. In some few cases of antenna installation and signal conditions the best picture may not be obtained when using the A.F.T.. This may be customized for the particular installation as follows. Move the A.F.T. switch to the OFF position. Turn the channel selector to a local station, preferably one transmitting color and turn the fine tuning control until the picture is WORMY. Carefully adjust the fine tuning control in the opposite direction until the WORMY condition of the picture just disappears. Fine tuning is now properly set. Move the A.F.T. switch to the ON position.

The quality of the picture or color intensity of the picture should not appreciably change. If it does then adjust L1403, Figure 1, (accessible thru the back cover and labeled A.F.T.) with a standard .076 hex core wrench until the picture quality and color intensity is essentially the same as when the A.F.T. switch is in the OFF position and the fine tuning control is properly set as previously described. Alternately moving the A.F.T. switch ON and OFF while observing the picture makes the adjustment quite easy.

Check the A.F.T. action on all local channels to be sure that the adjustment satisfies any peculiar reception conditions.

SERVICE ADJUSTMENTS

COLOR TEMPERATURE ADJUSTMENTS

Preset the following controls: the brightness and contrast controls about mid-range, color killer (R730B), fully counterclockwise, the red, blue and green screen controls, (R765A,B,&C), fully counterclockwise, brightness range (R324) fully clockwise, pix bias (R730A), (on some chassis), fully counterclockwise, the "Service-Normal Rast" switch (S301) to "Service".

Advance the screen controls so that each control just produces a line on the picture tube. To facilitate this observation, the lateral magnet may be displaced slightly so that each line may be viewed separately.

NOTE: If one or more controls fail to produce a line, readjust the pix bias control (R730A), until the line or lines appear.

Return the "Service-Normal-Rast" switch to "Normal" and with the brightness and contrast controls set for average viewing on a black and white program adjust the blue and green drive controls (R316A & B) for a gray raster. If a gray raster can not be obtained with adjustment of the drive controls, interchange the red and green cathode leads of the pix tube where they are plugged on the PW300 board at J307 and J309. The green drive level will now be fixed and the green drive control will adjust the red drive content.

Check the picture from highlights to lowlights. If the screen and drive controls are properly set good tracking will be achieved and the raster color will not change from high to low brightness levels.

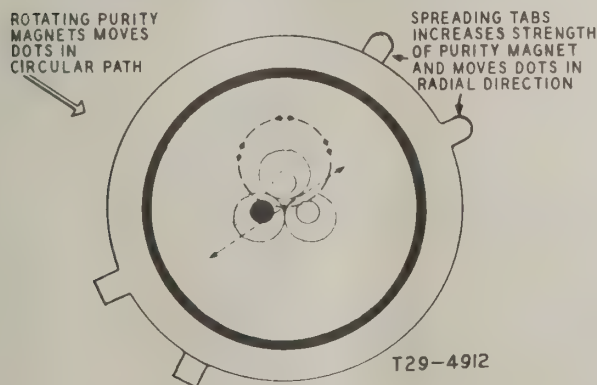


Figure 4.— Center Landing Adjustments

BRIGHTNESS RANGE ADJUSTMENT

After the Color Temperature adjustments are made, do the following: with 120 VAC line and "Service-Normal-Raster" switch in Rast position, turn Brightness control to minimum (CCW). Check for 25KV Ultor Voltage. If not, adjust H.V. Adjust (R910) control for 25KV. Turn Brightness control to maximum (CW), and adjust Brightness Range control (R324) for 23.5KV Ultor Voltage.

PURITY ADJUSTMENTS

NOTE: Before purity adjustments can be made, instrument should be operated with full brightness (without bloom) for a minimum of ten minutes and center convergence must be correct.

The receiver should always be facing either to the north or to the south when setting purity adjustments.

Purity adjustments are most accurate while observing RED FIELD ONLY.

To obtain Red Field move the Serv-Norm-Rast switch S301 located on PW300 to the RAST position and after turning the Blue and Green screen controls fully counterclockwise adjust the Red screen control to sufficient brightness to observe purity. The Blue and Green fields may be separately viewed by advancing these controls one at a time with the other two turned off.

Loosen the two wingscrews and yoke mounting ring screw and slide the yoke back against the convergence coils assembly. Adjust for a uniform red area in the center of the screen by spreading or rotating the purity magnet assembly located on the Blue lateral magnet housing assembly. (See Figs. 5A, 5B)

Spreading the tabs increases the magnet strength and moves beams in a radial direction. Rotating the purity magnets moves beams in a circular path. (Fig.4)

After center purity has been attained, slide yoke toward the picture tube bell while observing the entire screen. Position the yoke for the best overall red screen. If purity adjustments are made during minimum operating temperature conditions, the yoke should be set as close to rear edge of adjustment as is consistent with good purity. If receiver is hot (2-3 hours operating time) yoke should be placed as far forward as consistent with good purity.

Tighten the two wingscrews and yoke mounting ring screw.

Reactivate blue and green guns and observe all three beams. If screen is not a uniform white, reconverge center of screen and repeat purity adjustment.

OVERALL CONVERGENCE ADJUSTMENT

The receiver should always be facing either to the north or to the south during the purity adjustment. This assures that any effect of the earth's normal magnetic field upon beam landing will be negligible when the receiver is placed in its actual viewing location. Any color impurity induced by relocating the receiver will be removed by the Automatic Degaussing operation. The degaussing recurs any time the receiver is turned on, after being off for at least five minutes.

Adjust the receiver for a black and white picture. Check the Horizontal hold and the usual adjustments such as focus, vertical linearity, height and centering prior to proceeding with convergence.

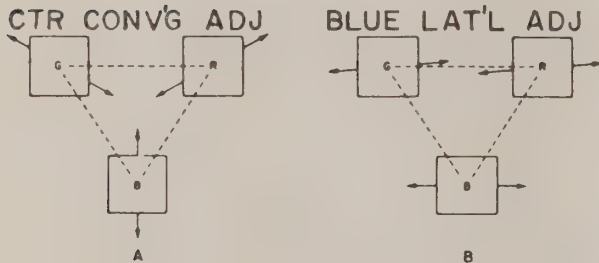
A Dot/Crosshatch Generator must be connected to the receiver for making the convergence adjustments.

SERVICE ADJUSTMENTS

FOR DOT/CROSSHATCH GENERATORS WITH RF OUTPUT

Turn receiver to a channel suitable for the particular generator. Clip the RF output cables of the generator directly to the VHF antenna input terminals of the receiver. Have the receiver in sharp focus and adjust the brightness just high enough to observe the pattern clearly.

Adjust the Red, Green and Blue center convergence magnets and the blue lateral magnet assembly to converge the beams in the center of the picture. Check center convergence periodically through the set-up procedure.



Dot Movement Pattern

The beams move at approximately the same angle as the convergence magnets are offset from the vertical plane. Blue, since it is mounted in a vertical plane, moves the blue beam up and down vertically; red and green move the respective beams on a line at about a 60° angle from the vertical. The thumbwheel adjustment of red, blue and green center convergence magnets can be rotated in either direction continuously.

The blue lateral assembly moves all three beams in a horizontal plane. The blue beam in one direction and the red and green beams in the opposite direction in a 5/1 ratio. Blue having the greatest lateral shift. The blue lateral magnets are adjusted by turning the knurled knob at the top of the assembly (Fig. 5A); or turning the large outside knurled wheel (Fig. 5B). If sufficient blue beam movement to the right or left does not occur thru full motion of the knurled wheel (Fig. 5B only), continue rotation of the adjustment wheel to force magnet carriers out of detent and rotate them 1/2 turn to the next detented position. Then readjust blue lateral landing by turning the knurled wheel in the opposite direction.

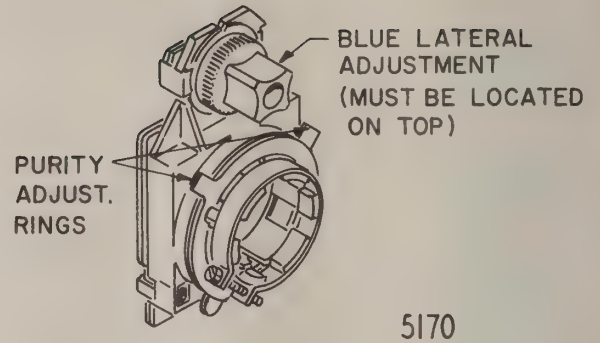


Figure 5A — Blue Lateral Magnet and Purity Ring Assembly

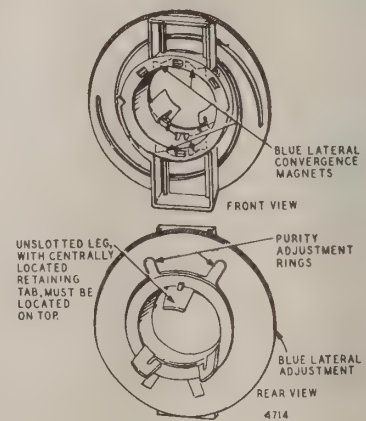


Figure 5B — Blue Lateral Magnet and Purity Ring Assembly

SERVICE ADJUSTMENTS

BLUE HORIZONTAL SHAPING COIL

The Blue Horizontal Shape Coil L803 is not a part of the convergence set-up adjustments. Misadjustment of this coil will cause horizontal distortion and eventual failure of one or more horizontal convergence components.

If, for any reason, L803 becomes misadjusted, it can be reset as follows:

Connect an oscilloscope between Terminal 3 of PW800 (white lead with blue tracer) and ground. Adjust L803 until the horizontal harmonic "bump" is at the 50% point on the sine wave slope. Waveform should be approximately 45 v P.P. (Fig. 6)

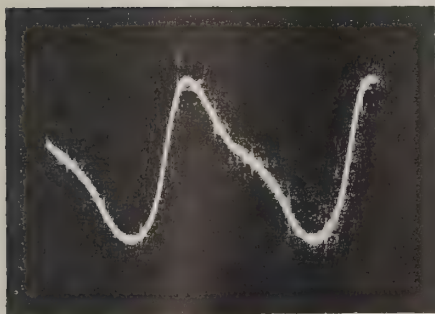


Figure 6—Blue Horizontal Waveshape
Term. 3 PW 800

TOP AND BOTTOM PINCUSHION ADJUSTMENT

The top and bottom pincushion adjustment is factory preset and normally needs no further adjustment.

Top and bottom pincushion adjustments may be made if necessary by adjusting for straight horizontal lines at the top and bottom of the raster.

With a crosshatch pattern on the screen, turn R111 full clockwise. Adjust L105 to move the top upward curvature to the top center of the screen. Then adjust R111 for straight horizontal lines. L105 changes the phase of the horizontal correction waveform and R111 affects its amplitude. See Fig. 1 for location L105.

The illustration shows the effect of extreme misadjustment of L105.

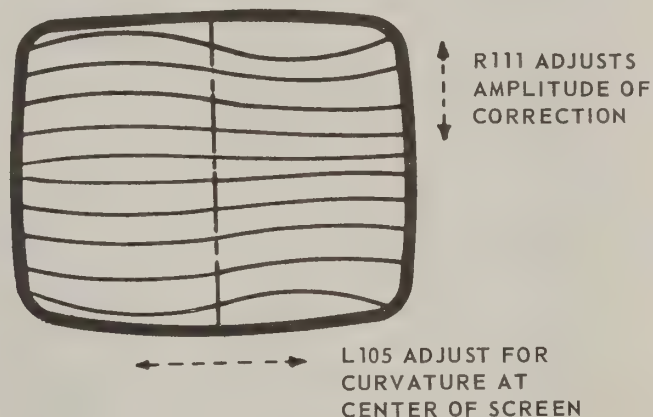


Figure 7.—Misadjusted Top & Bottom
Pincushion Adjustment

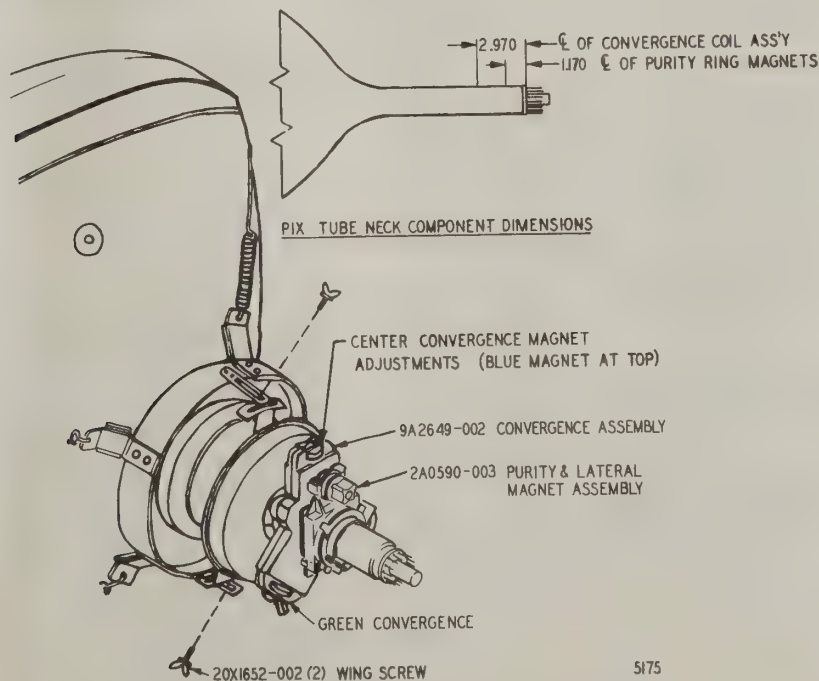
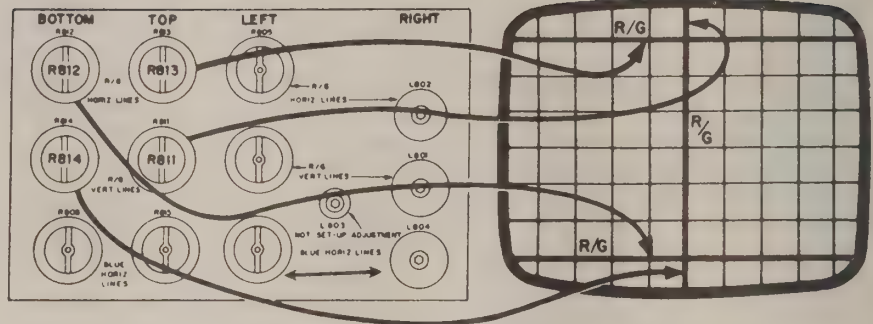


Figure 8. — Tube Assembly & Components

SERVICE ADJUSTMENTS

CONVERGENCE

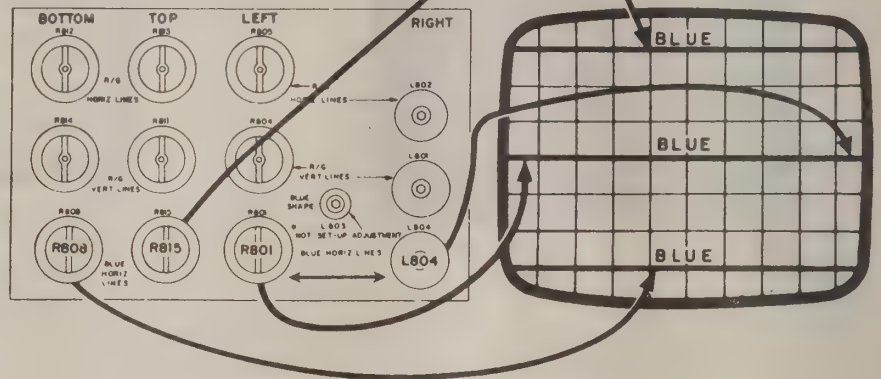
1. Use either crosshatch or dot pattern for center converge.
2. Converge center of screen with red, green, and blue magnets and the blue lateral magnet.
3. Adjust R811 and R814 for convergence (parallelism) of R/G vertical center line.



STEPS 3 AND 5 ADJUSTMENTS

Effect of R811, R812, R813 and R814 Adjustment

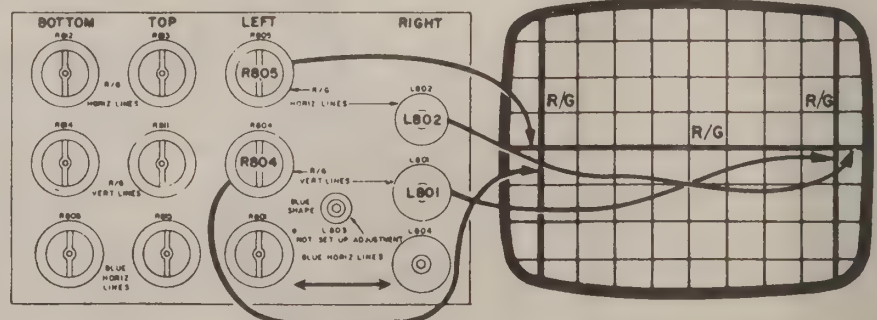
5. Adjust R812 to converge bottom R/G horizontal lines and R813 to converge top R/G horizontal lines at center line of screen.
6. Adjust R801 and L804 for straight horizontal blue center line.
7. Adjust R808 and R815 for uniform displacement of blue horizontal lines along center vertical lines.
8. Converge blue horizontal lines with R/G horizontal lines by adjusting the blue convergence magnet. Adjust red and green magnets if necessary.



STEPS 6 AND 7 ADJUSTMENTS

Effect of R801, L804, R808 and R815 Adjustment

9. Repeat steps 6 through 8 if necessary.
10. Adjust alternately L801 and R804 for right and left side convergence of R/G vertical lines.
11. Adjust alternately L802 and R805 for convergence of R/G horizontal center line.
12. Converge center of screen and repeat steps 10 and 11 if necessary.
13. Minor touch-up adjustments may be made using the appropriate controls.



STEPS 10 AND 11 ADJUSTMENTS

Effect of L801, R804, L802 and R805 Adjustment

INSTRUMENT DISASSEMBLY

Recommended Tools: Screwdriver (4" or 6" Shank),
1/4", 5/16" and 3/8" Socket Head Wrench (4" or 6"
Shank) or Nut driver, 5/16" "Off-Set" Socket Head.

Chassis Removal

1. Disconnect line cord from wall outlet. Remove the cabinet back and disconnect the VHF and UHF antenna terminals from the tuner.
- *2. Remove the four 5/16" hex head screws securing the chassis to the chassis retainer bracket.
3. Disconnect the speaker leads from speaker.
4. Disconnect the picture tube socket.
5. Disconnect the yoke plug and convergence plug.
6. Disconnect the automatic degaussing plug from the power supply board.
7. Disconnect the I.F. cable plug at the tuner.
8. Disconnect the tuner cable plug, secondary control plug, and auxiliary control plug from chassis.
9. Disconnect the volume control plug from the I.F. — pix sound board.
10. Disconnect the anode lead from the picture tube.
11. Slowly slide chassis rearward until chassis strikes spring clip (at left side of chassis from rear). Then move front end of clip forward with a slight pressure so as to clear chassis tab and continue to slide chassis rearward out of chassis retainer bracket.
12. When reinstalling the chassis, brace the cabinet to prevent accidental tipping.

***In later production only 2 screws at rear are used for mounting chassis to the chassis retainer bracket.**

Tuner Removal

1. Remove the VHF and UHF channel selector knobs, UHF indicator dial (some models), Fine tuning knob, Off-On-Volume knob (some models), Color knob (some models), Tint knob (some models), and AFT knob (some models) from the front of cabinet.
2. Remove the three keps hex nuts and the 5/16" hex head screws or four 1/4" hex head screw, or four 3/8" hex self threading nuts (depending on chassis model).
3. After removal of necessary plugs I.F. cable, Tuner cable and Secondary control cable (some models), the tuner assembly may be completely removed from the cabinet or mounted to the service bracket located on top of power transformer using two #8-32 x 1/4" self tapping screws (not supplied with receiver).

Secondary Control Bracket Removal

(Some models where it is not part of tuner assembly)

1. After removal of secondary control plug from chassis and disconnecting pilot light plug to tuner, pull off the secondary control knobs on front panel (Volume, Color and Tint).
2. Remove the three 5/16" hex head screws holding the secondary control bracket assembly to the rear of the pix mask.

Auxiliary Control Bracket Removal (Brightness, Vertical Hold and Contrast)

1. After removal of auxiliary control plug from chassis, remove the two hex head screws or the two self threading nuts (depending on chassis model). Tilting knob end of assembly up slightly when removing bracket allows complete auxiliary control bracket removal.

PICTURE TUBE REMOVAL AND REPLACEMENT

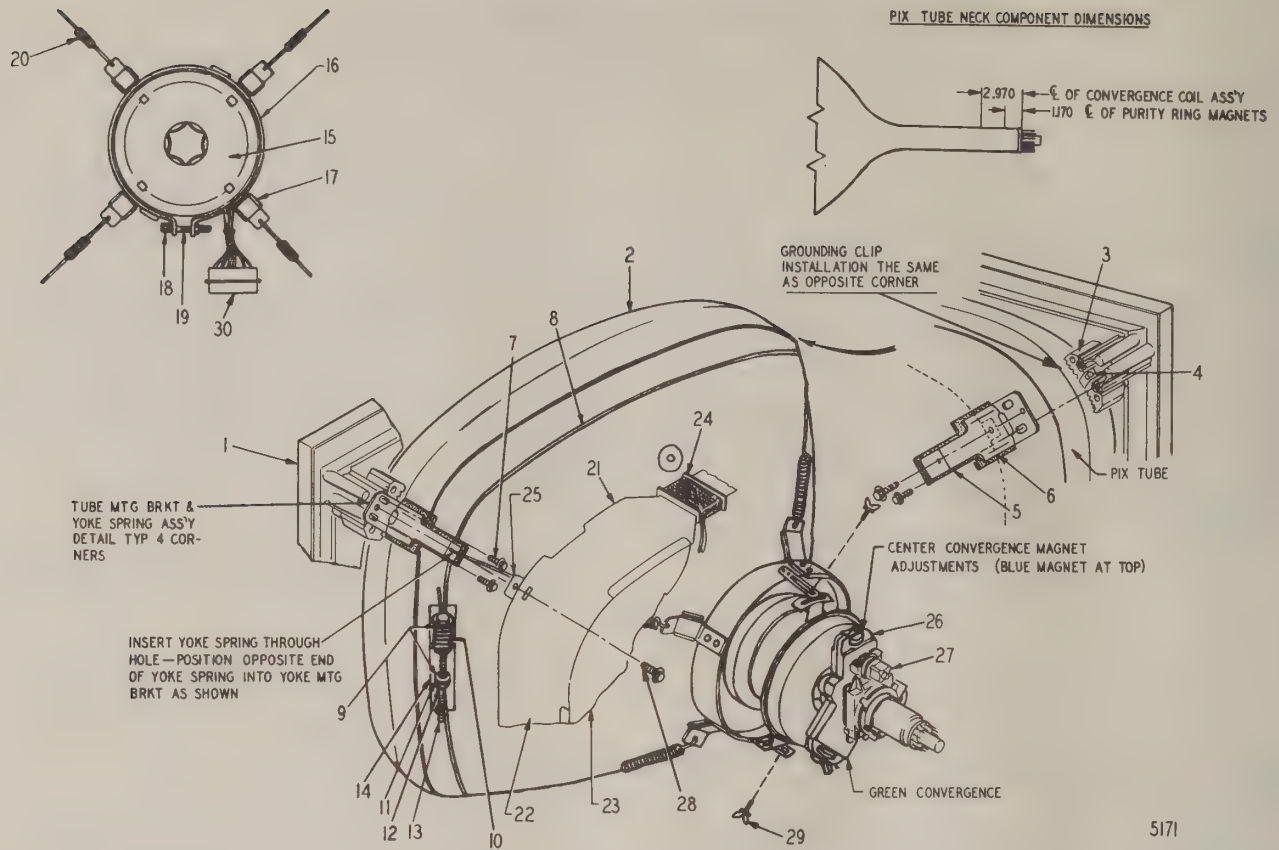
NOTE—Chassis must be removed before replacing pix tube.

1. Loosen screw on blue lateral magnet assembly and slide assembly from the neck of the tube.
2. Loosen clamp screw or clip holding the convergence coils assembly and remove the screw holding the convergence board assembly and remove from cabinet.
3. Remove the two wing screws and loosen tensioning screw in yoke mounting ring and remove yoke.
4. Remove the four screws holding the purity shield to the pix tube corner brackets, ground lead assembly and remove shield.
5. Unhook four springs from yoke mounting and remove from the corner brackets.
6. Loosen wire mounting ring.
7. Remove the four pix tube corner brackets.
8. Carefully lift pix tube out of cabinet.

NOTE: If the four rubber bumpers move out of position replace them.

9. Remove yoke mounting ring from pix tube.
NOTE: Avoid distorting the yoke mounting ring during removal. Tabs should be reformed if they are bent during ring removal.
10. Using NEW 89X0068-001 double faced tape on the tabs of the yoke mounting ring and using the yoke snug against the bell of the tube as a positioning fixture remount the ring to the pix tube.
11. Carefully install new picture tube and reverse steps 1 through 10.
NOTE—Remove cushion from under mounting ring on old pix tube and apply cushion to new pix tube.
12. Return cabinet to the upright position and reverse steps 1 through 12 of chassis removal.

PICTURE TUBE ASSEMBLY & COMPONENTS



5171

Item No.	Description	Part Nos.				Qty.
		25" Bonded	25" Banded Kimcode	23" Bonded	23" Banded Kimcode	
1	Pix Mask	4X(See Parts List)	4X()	4X()	4X()	1
2	Pix Tube	88X(See Parts List)	88X()	88X()	88X()	1
3	Pix Tube Mounting Bumper	8X0330-001	8X0336-001	8X0313-001	8X0327-001	4
4	Grounding Clip		30X0700-001		30X0700-001	2
5	Cushion	8X0322-001	8X0322-001	8X0322-001	8X0322-001	4
6	Tube Mtg. Brkt.	25X2678-001	25X2739-001	25X2678-001	25X2739-001	4
7	Sems Screw, #10-24 x 1/2	20X1794-049	20X1794-049	20X1794-049	20X1794-049	8
8	Mounting Ring	28X0761-001	28X0761-001	28X0725-001	28X0725-001	1
9	Eyelet	20X1858-000	20X1858-000	20X1858-000	20X1858-000	2
10	Compression Spring	28X0674-000	28X0674-000	28X0674-000	28X0674-000	1
11	Washer	19X0521-000	19X0521-000	19X0521-000	19X0521-000	2
12	Keps Nut, #10-32	20X1877-001	20X1877-001	20X1877-001	20X1877-001	1
13	Sems Screw, #10-32 x 3	20X1794-084	20X1794-084	20X1794-084	20X1794-084	1
14	Cushion	8X0317-008	8X0317-008	8X0317-008	8X0317-008	1
15	Deflection Yoke (Incl. Item 30)	9A2707-001	9A2707-001	9A2707-001	9A2707-001	1
16	Bracket Yoke Mtg. Ass'y.	38A3749-000	38A3749-000	38A3749-000	38A3749-000	1
17	1" Tape	89X0068-001	89X0068-001	89X0068-001	89X0068-001	4
18	Spring	28X0737-001	28X0737-001	28X0737-001	28X0737-001	1
19	Screw, #10-32 x 2 HWH	303X1704-632	303X1704-632	303X1704-632	303X1704-632	1
20	Yoke Spring	28X0733-008	28X0733-009	28X0733-002	28X0733-007	4
*21	Purity Shield/Degaussing Ass'y.	38A4169-000	38A4169-000	38A4140-000	38A4140-000	1
22	Shield	32X0497-003	32X0497-003	32X0497-002	32X0497-002	2
*23	Purity Shield	32X0503-001	32X0503-001	32X0499-001	32X0499-001	2
24	Degaussing Coil	9A2711-001	9A2711-001	9A2711-001	9A2711-001	2
25	Speed Clip	20X1931-001	20X1931-001	20X1931-001	20X1931-001	4
26	Convergence Ass'y.	9A2649-002	9A2649-002	9A2649-002	9A2649-002	1
27	Purity & Lateral Magnet Ass'y.	2A0590-003	2A0590-003	2A0590-003	2A0590-003	1
28	#8 x 5/8 SL HH TP A	20X1794-002	20X1794-002	20X1794-002	20X1794-002	4
29	Wing Screw	20X1652-002	20X1652-002	20X1652-002	20X1652-002	2
30	Yoke Plug Housing	6A0379-001	6A0379-001	6A0379-001	6A0379-001	1

*Items under 23"V Banded Kimcode listing are the same as for 23"V Banded Kimcode w/Metal Cabinet except for Item 21 and 23.

*21 38A4418-000 *23 Not Required

TEST EQUIPMENT

To facilitate service and alignment of these chassis, it is recommended that the following test equipment be used to assure proper performance of the instrument.

ABSORPTION TYPE VIDEO MARKER BOX.—Marker Box to provide the following frequencies: 0.5 mhz; 1.5 mhz; 2.5 mhz; 3.08 mhz; 3.58 mhz; 4.08 mhz and 4.5 mhz.

BIAS SUPPLY.—Bias source to supply three outputs variable between 0-15 volts D.C.

COLOR BAR/DOT/CROSS-HATCH GENERATOR.

DEMAGNETIZING COIL.—Approximately 425 turns of #20 enameled wire 12 inches in diameter. Connected across 120 volt 60 Hz AC source.

VTVM.—A voltmeter with a 1.5 volt DC or lower scale is required with appropriate probes. (Low capacity probe, diode probe, and High Voltage Probe).

MATCHING PADS.—See Figs. 12 through 17.

OSCILLOSCOPE.—Wide band oscilloscope.

R-F MODULATOR

VHF SWEEP GENERATOR.—Meeting the following requirements:

- (a) Frequency Ranges
 - 0 to 5 mhz. Video Sweep
 - 35 to 90 mhz., 1 mhz. to 12 mhz. sweep width
 - 170 to 225 mhz., 12 mhz. sweep width
- (b) Output adjustable with at least .1 volt maximum.

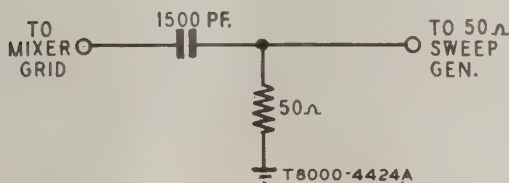


Figure 12 — Mixer Grid Matching Pad

CRYSTAL CALIBRATED MARKER GENERATOR.

To provide the following frequencies with crystal accuracy:

- (a) Intermediate frequencies 4.5 mhz., 40.0 mhz. to 60.0 mhz.
- (b) Radio frequencies

Channel Number	Picture Carrier Freq. Mhz.	Sound Carrier Freq. Mhz.	Receiver R-F Osc. Freq. Mhz.
2	55.25	59.75	101
3	61.25	65.75	107
4	67.25	71.75	113
5	77.25	81.75	123
6	83.25	87.75	129
7	175.25	179.75	221
8	181.25	185.75	227
9	187.25	191.75	233
10	193.25	197.75	239
11	199.25	203.75	245
12	205.25	209.75	251
13	211.25	215.75	257

- (c) Output of these ranges should be adjustable and at least .1 volt maximum.

VHF HETERODYNE FREQUENCY METER with crystal calibrator if the signal generator is not crystal controlled.

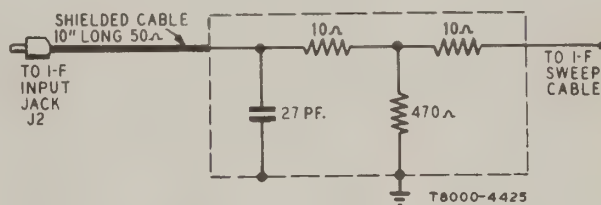


Figure 13 — Tuner IF Input Head

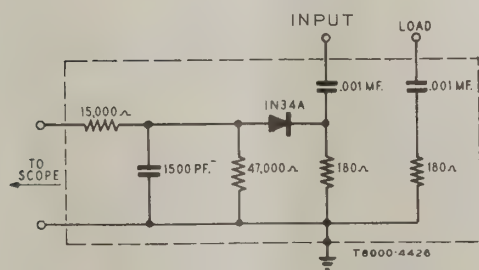


Figure 14 - I-F Detector Test Block

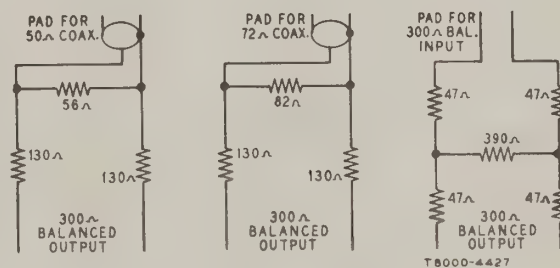


Figure 15 — Sweep Attenuator Pads

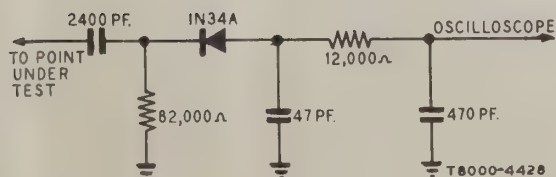


Figure 16 — Video Detector Test Block

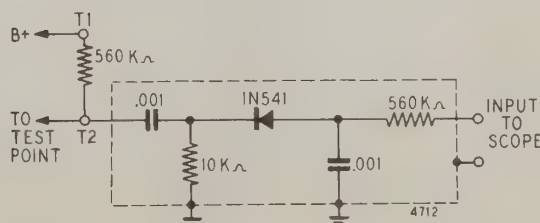


Figure 17 — Sound Detector Test Block

GENERAL ALIGNMENT INSTRUCTIONS

EQUIPMENT

The test equipment specified on page 11, or its equivalent, is required to properly perform the alignment procedures which are outlined on the following pages. Use of equipment which does not meet these requirements may result in the inability to properly align the instrument.

A warm-up period of at least fifteen minutes should be allowed for proper stabilization of equipment such as Signal and Sweep Generators.

It is essential that the proper bias values as specified are maintained during alignment to insure the proper results.

EQUIPMENT TERMINATIONS

The alignment pads and the input head are designed for correct matching of the equipment to the circuits involved. Failure to use proper matching will result in responses which cannot be depended upon as representing the true operation of the receiver. The pads should be constructed as compactly as possible and all unshielded leads at the end of the test equipment cables should be as short as possible, preferably not in excess of one inch long.

In many instances a small ceramic capacitor of approximately 1000 mmf. connected from the oscilloscope probe to ground will eliminate stray pick-up of unwanted signals. If used, make sure the capacitor does not affect the shape of the response being observed.

HORIZONTAL INTERFERENCE

Interference from the horizontal sweep circuits of the receiver may appear on the responses making it difficult to observe a clearly defined trace. To avoid

such interference, the horizontal circuits may be disabled during alignment of the IF, RF and Video sections of the receiver.

The horizontal circuits in these receivers should be disabled in the following manner: Remove the horizontal output tube V902. Connect a 1400 ohm, 100-watt resistor from the +280-volt bus to ground, to load the B+ supply by an amount equivalent to the horizontal circuit load.

If interference is encountered from the vertical deflection circuits during alignment, switch the "Serv-Norm-Rast" switch on the rear of the chassis to the "Service" position.

SIGNAL OVERLOAD

Use of excessive signal from the sweep generator can cause overloading of the receiver circuits. To determine that this condition is not present and that the response curve is true, turn the sweep generator output to zero and then gradually increase the output until a response is obtained. Further increase of the sweep output should not change the configuration of the response except in amplitude. If the response changes in configuration, such as flattening at the top or dropping below the base line at the bottom, decrease the sweep output to restore the proper configuration. The oscilloscope gain should be run as high as possible to maintain a usable pattern with the peak-to-peak values specified, thus requiring a lower output from the sweep generator and less chance of overload.

Insertion of markers from the signal generator should not cause distortion of the response. The markers should be kept as small as possible and still remain visible.

25A1282-001 THRU -004 (STANDARD KOLLSMAN) TUNER R-F ALIGNMENT FOR SPECIFIC TUNER BREAKDOWN – SEE PARTS LIST

TEST EQUIPMENT CONNECTIONS

- BIAS** Apply – 2.5 volts to a.g.c terminal on tuner. Ground positive lead to tuner case.
- OSCILLOSCOPE** Connect to RF Test Point as shown in Fig. 18 using direct probe. Set "scope" for 1.5 to 2 volts peak to peak.
- SWEEP GENERATOR** Connect to antenna terminals through pad shown in Fig. 15.
- SIGNAL GENERATOR** Couple RF output cable loosely to sweep cable to provide markers. Insert insulated wire into top of Oscillator/Mixer tube shield. Connect other end to "RF in" terminals of generator.

ALIGNMENT PROCEDURE					
STEP		SWEEP GENERATOR	SIGNAL GENERATOR	ADJUST	REMARKS
Shield must be in place during alignment.					
1	Adjust RF Plate and Mixer Grid on Channel 10	Channel 10	193.25 mhz. 197.75 mhz.	C205 & C211	Refer to Fig. 18 for adjustment locations and responses. Adjust for approximate correct waveshape as shown in "A".
Change the bias at a.g.c. terminals to - 15 volts.					
2	Adjust neutralization on Channel 10	Channel 10 (Maximum Output)	_____	C204	Connect "scope" to detector (TP302) output and set for maximum gain. Adjust C204 for minimum response.
Return bias at a.g.c. terminal to - 2.5 volts.					
3	Recheck Channel 10 Response	Channel 10	193.25 mhz. 197.75 mhz.	C205	Re-check C205 setting as RF plate and neutralizing adjustments interact.
4	Check tracking and response on all channels. Should be similar to Fig. "A". If difficulty is encountered in obtaining response of Fig. "A," adjustment of RF Plate and/or mixer coils may be required.				

CAUTION should be observed on adjustment of coils. Permissible pass band shown in Fig "B".

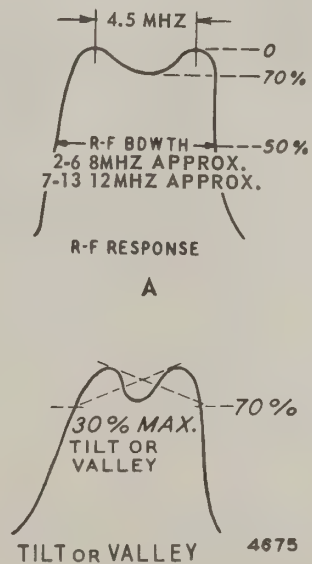
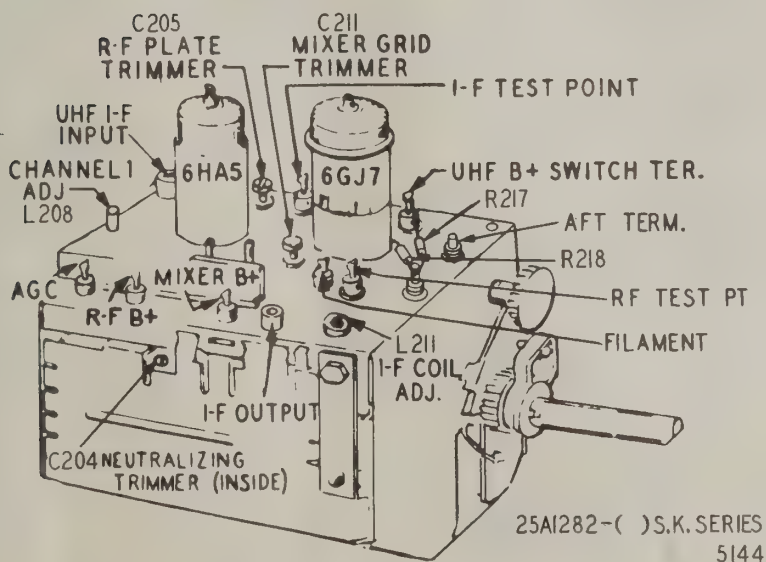
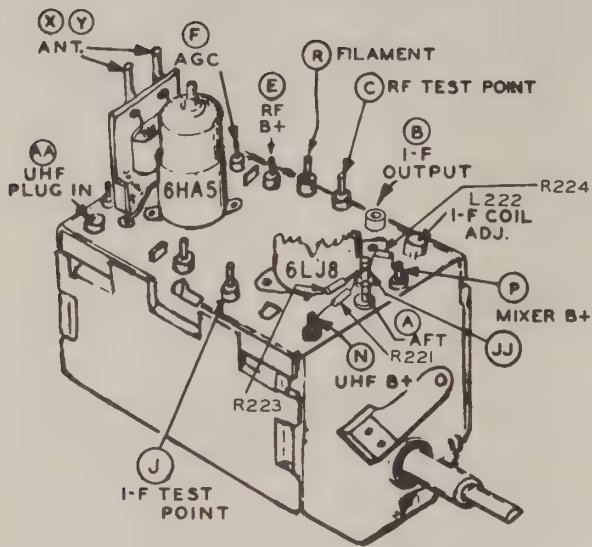


Figure 18 – Standard Kollsman Tuner Adjustments & Connections

**25A1283-001 THRU -004 SARKES-TARZIAN VHF TUNER INFORMATION
FOR SPECIFIC TUNER BREAKDOWN - SEE PARTS LIST**



TUNER ALIGNMENT — This tuner has been adjusted at the factory and once the inductors have been set it should not be necessary to adjust them in the field. The tuner features high stability and trouble-free operation, and in general R.F. and mixer alignment is permanent. If it has been positively established that complete tuner alignment is necessary, return the tuner to WELLS-GARDNER ELECTRONICS Corporation for repair or replacement.

CHECK OF V.H.F. R.F. OSCILLATOR ADJUSTMENTS — Tune in all available stations to see that the receiver R.F. oscillator is adjusted to the proper frequency on all active channels. All models incorporate the "One Set" fine tuning feature which requires the following procedure for oscillator adjustment:

Turn channel selector to desired channel, turn the fine tuning control for best picture and sound. Under normal operation no further adjustment is required.

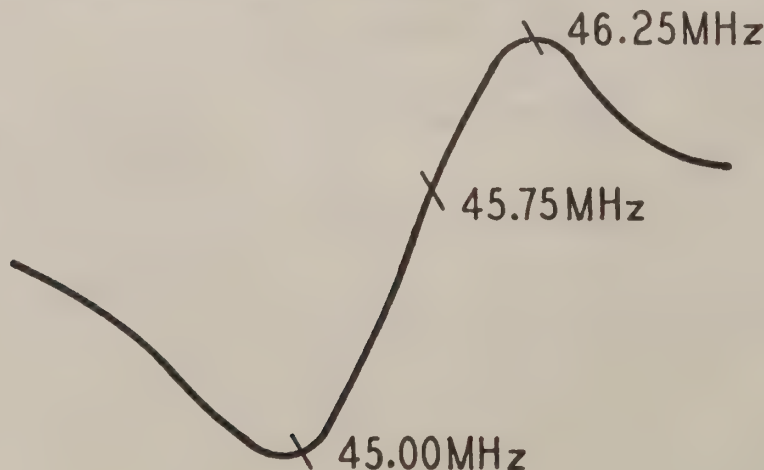
Figure 19 — Sarkes-Tarzian Tuner Adjustments & Connections

**ALIGNMENT
SWEEP ALIGNMENT OF AUTOMATIC FINE TUNING**

TEST EQUIPMENT CONNECTIONS:

- GENERAL** Disable the horizontal sweep section of the receiver (see "General Alignment Instructions").
- SWEEP GENERATOR** Connect in series with matching pad, shown in Fig. 12, to mixer grid test point on tuner.
- SIGNAL GENERATOR** Couple loosely to sweep generator output cable to provide markers.
- BIAS SUPPLY** Apply -5 volts to TP302. Apply -15 volts to the tuner a.g.c. (J303-5).
- OSCILLOSCOPE** Connect to TP301.

- PROCEDURE** — 1. Adjust Signal Generator output for 3 volts peak to peak at detector (TP301).
2. Remove oscilloscope from TP301. Disconnect lead from C1412 to tuners and connect oscilloscope to C1412.
3. Refer to Fig. 1 Adjust L1403 for zero output at 45.75 MHz.
4. Adjust L1401 for maximum positive amplitude at 46.25 MHz.
5. Adjust L1402 for maximum negative amplitude at 45 MHz.
6. If 45.75 MHz needs further adjustment, repeat Steps 3, 4, and 5.
7. Reconnect lead between C1412 and Tuners.



ALIGNMENT

SOUND I-F, SOUND DEMODULATOR AND 4.5 MHZ TRAP ALIGNMENT

TEST EQUIPMENT CONNECTIONS:

GENERAL Connect a 330 ohm resistor in series with a 2 mfd. capacitor from pin 5 of V303 to ground. Connect Video Det. Test Block (Fig. 16) to pin 5 of V303. Connect the Sound Detector Test Block (Fig. 17) to pin 1 of V302. Ground pin 7 of V302 with a short jumper. Use a "live" signal from local TV station for signal source.

BIAS SUPPLY Connect a -15 volt bias source to J303-5. (R.F.A.G.C.)

VACUUM TUBE VOLTMETER Connect to the output of the Video Detector Test Block (Fig. 16).

ALIGNMENT PROCEDURE			
See "General Alignment Instructions" Before Attempting Alignment			
STEP		ADJUST	REMARKS
1	Adjust Sound I.F. Take-Off Coil	L302	Adjust L302 for maximum d.c. on meter. Set bias at a.g.c. terminal to produce 0.5 volt on meter when finally peaked. (Core set on peak at top end of coil.)
Remove the video detector test block, 2 mfd. capacitor, and the 330 ohm load at pin 5 of V303. Connect the meter to the output of the sound detector test block.			
2	Adjust Sound I.F. Transformer Primary and Secondary	T301 (top and bottom)	Adjust T301 top and bottom for maximum deflection on meter. Adjust a.g.c. bias to produce 1.0 volt on meter when finally peaked. Peak cores at open end of coils.
Repeat Steps 1 and 2 if necessary to obtain maximum indication on the meter, maintaining 0.5 volt in Step 1 and 1.0 volt in Step 2.			
3	Disconnect the sound detector test block and the jumper from pin 7 of V302. Turn the bias supply for 0 volts at the AGC terminal. Adjust the volume control for normal volume level. Turn the core of L301 flush with top of coil form.		
4	Adjust Sound Demodulator Transformer	Listening to the audio output, adjust L301 clockwise to a peak. Continue clockwise to a second louder peak and adjust L301 for a maximum on this second peak. Decrease the signal input by increasing the a.g.c. bias until signal distorts. Adjust T301 (top) for clear signal without distortion. Continue reducing signal input and adjusting of T301 (top) until a very sharp point is obtained where the signal is clear, with distortion occurring as T301 (top) is adjusted the slightest amount in either direction. (NOTE: In extremely strong signal areas, the bias may not produce a weak enough signal to make the signal distort. If so, further reduction of the signal can be obtained by loosely coupling the antenna to the receiver or by use of an attenuator pad in the antenna lead.)	
Remove the bias supply. Set the fine tuning to produce a 4.5 mhz. beat on the picture tube.			
5	Adjust 4.5 mhz Trap	L308	Adjust L308 for minimum 4.5 mhz. indication on the picture tube.

ALIGNMENT

SWEEP ALIGNMENT OF PICTURE I-F

TEST EQUIPMENT CONNECTIONS

- GENERAL.** Disable the horizontal sweep section of the receiver (see "General Alignment Instructions").
- BIAS SUPPLY** Ground TP302 of PW300. Apply— 15 volts to the tuner a.g.c. (J303-5).
- OSCILLOSCOPE.** Connect to pin 5 of V304 using IF Test Block shown in Fig. 14. Load the plate of the 2nd picture IF, pin 5 of V305, by connecting to "LOAD" of IF Test Block.
- SWEEP GENERATOR** Connect in series with matching pad, shown in Fig. 12, to mixer grid test point on tuner.
- SIGNAL GENERATOR.** Couple loosely to sweep generator output cable to provide markers.

ALIGNMENT PROCEDURE					
See "General Alignment Instructions" Before Attempting Alignment					
STEP		SWEEP GENERATOR	SIGNAL GENERATOR	ADJUST	REMARKS
Set channel selector to channel 13					
1	Adjust mixer plate trans., 1st pix. IF grid transformer & input coup. cap.	40-50 MHz (IF)	42.17 MHz 45.75 MHz	L211 SKI L222 Sarkes	Sweep set for 0.1 volts peak to peak on "scope." Adjust for maximum gain and response "A" in Fig. 20.
		40-50 MHz (IF)	42.17 MHz 45.75 MHz	C317 T302	
2	Check 47.25 MHz IF input trap	40-50 MHz (IF)	47.25 MHz	L305 & R354	Adjust for minimum response at 47.25 MHz.
3	Recheck adjustment of L211 or L222, T302 and C317 for correct response as shown in "A" of Fig. 20. Repeat steps 1 and 2 if necessary.				
Remove the IF test block from the 1st picture IF plate and the load from the 2nd picture IF plate. Calibrate the oscilloscope for 2.5 volts peak to peak and connect to TP301 in series with a 10,000 ohm resistor. Remove ground from TP302 of PW300 and apply -7.0V to TP302 of PW300.					
4	Align 3rd pix. IF transformer	40-50 MHz (IF)	41.65 MHz 42.17 MHz 42.75 MHz 45.00 MHz 45.75 MHz	T305 (bottom)	Align T305 (tilts curve), T304 (affects 42.17 MHz side) and T303 (affects 45.75 MHz side) alternately to obtain the response shown in "B" of Fig. 20. Use 2.5 volts peak to peak on "scope."
5	Align 2nd pix. IF transformer	40-50 MHz (IF)		T304	
6	Align 1st pix. IF transformer	40-50 MHz (IF)		T303	
7	Check 41.25 MHz attenuation at 3rd pix IF	40-50 MHz (IF)	41.25 MHz Strong Marker	T305 (top) & R335	Adjust for minimum at 41.25 MHz along with response "B".
Connect VHF sweep generator to the VHF antenna terminals using pad shown in Fig. 15. Decrease the RF a.g.c. bias, to -3 volts.					
8	Check RF/IF overall on VHF	Channels 13 to 2	Channels 13 to 2 Pix, and Sound Markers	T305 (bottom)	Retouch slightly, if necessary, to correct for any overall tilt. Maintain response "B".
NOTE:—In step 10 above, if only one or two channels are out of limits the tuner RF alignment should be checked. However, any tilt consistent to all channels may be corrected by IF retouch. If any major adjustment is required, be certain to repeat step 7.					
Connect the UHF sweep generator to the UHF antenna terminals					
9	Check RF/IF overall on UHF	Tune entire UHF range	Channel Markers	* SKI L201 Sarkes	Retouch slightly to correct any overall tilt. Do not retouch IF adjustments on UHF check of overall.

* No Adj. for SKI Tuner.

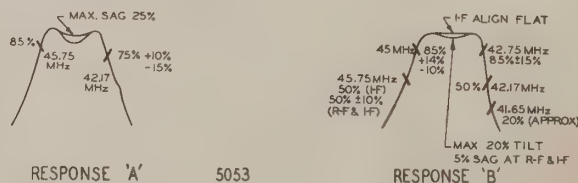


Figure 20—Sweep Alignment of Pix I-F

ALIGNMENT

CHROMA BANDPASS ALIGNMENT

TEST EQUIPMENT CONNECTIONS:

- GENERAL. Disable the horizontal sweep section of the receiver (see "General Alignment Instructions").
- BIAS SUPPLY Apply -15 volts to tuner a.g.c. (J303-5) on PW300
Apply -7.0volts to I.F. a.g.c. (TP302)
Apply -4 volts to 1st Chroma amp (TP701) on PW700
- OSCILLOSCOPE. Connect to TP705 using Video Detector Test Block (Fig. 16)
(Fig 16)
- R-F MODULATOR Connect as shown in Fig. 21
- SIGNAL GENERATOR. Connect as shown in Fig. 21
- SWEEP GENERATOR Connect as shown in Fig. 21
- MARKER BOX. Connect as shown in Fig. 21
- NOTE:** The I.F., especially the 41.25 MHz and 4.5 MHz traps, must be properly aligned to achieve proper bandpass alignment.

ALIGNMENT PROCEDURE					
STEP		SWEEP GENERATOR	SIGNAL GENERATOR	ADJUST	REMARKS
1	Adjust Chroma Take-off Coil	0-5 MHZ. Sweep-width	45.75 MHZ.	L701	Adjust chroma take-off coil (L701) for maximum peak at 4.0 MHZ. marker. (Do not exceed 0.5 V peak to peak on scope).
2	Adjust 1st Chroma Bandpass Transformer	0-5 MHZ. Sweep-width	45.75 MHZ.	T701 (Top & bottom cores)	Adjust bottom core of T701 until 3.0 MHZ. marker is on top of curve. Adjust top core of T701 to correct for any tilt. See Fig. 22.
Move Video Detector Test Block to TP706 and adjust color control for 1 volt P-P.					
3	Adjust 2nd Chroma Bandpass Transformer	0-5 MHZ. Sweep-width	45.75 MHZ.	T702	Adjust T702 to remove any tilt in the response. See Figure 22.

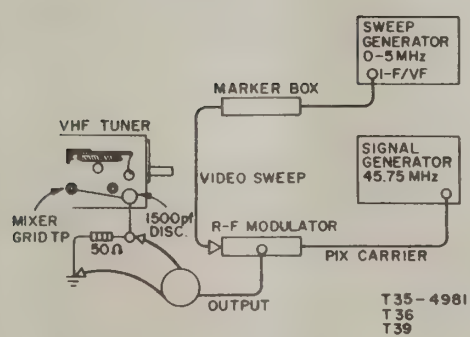


Figure 21 – Chroma Bandpass Alignment

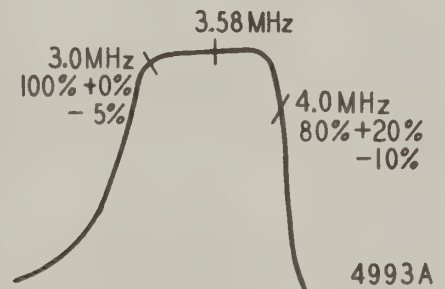


Figure 22 – Chroma Bandpass Waveform

ALIGNMENT

COLOR AFPC ALIGNMENT

TEST EQUIPMENT CONNECTIONS:

GENERAL Apply color signal to chassis (either station or color bar generator). Set killer control fully clockwise. Be certain the horizontal deflection circuits are operating and the a.g.c. control is set properly. Set color control fully maximum. Tint control fully minimum.

VTVM Connect in series with a 470K resistor to TP702.

ALIGNMENT PROCEDURE			
STEP		ADJUST	REMARKS
1	Ground TP701. Ground TP703 thru a silicon diode (cathode to ground) (66X0023-001 or equiv.)		
2	Adjust Burst Amp. Transformer	T703	Adjust T703 for minimum D.C. volts at TP702. (Core at bottom).
3	Adjust Trimmer Capacitor	C725	Observe the picture tube and adjust C725 for zero beat. (Colors stand still on screen or drift slowly).
4	Adjust Oscillator Bias Coil	L706	Adjust L706 for -3.0V dc $\pm 0.5V$ at TP702. (Core at bottom)
Repeat step 3. and 4. until zero beat, and -3.0V DC is achieved.			
5	Remove shorts on TP703 and TP701. Color should be in sync.		
6	Adjust ECO coil	T704	Connect VTVM thru 470K resistor to TP704 and adjust T704 for equal DC volts at both extremes of tint control. (Core at bottom position). Slight adjustment of ECO coil may be made to obtain proper tint range.
After completion of demodulator phase adjustment, return the tint control to approximately mid-range (nominal phase position). The 6th bar (R-Y waveform) should be cancelled as shown in Fig. 23.			
DEMODULATOR PHASE CHECKS: (USING COLOR BAR GENERATOR)			
Check the three color outputs at the kinescope grids for proper matrixing. The waveforms and amplitudes should conform to Fig. 24.			
a. Check R-Y waveform at PW700 J701-1			
b. Check G-Y waveform at PW700 J702-5			
c. Check B-Y waveform at PW700 J701-3 (phase should be correct within $\pm\frac{1}{2}$ bar).			
7	Adjust killer threshold	R730B	Adjust with a snowy raster on UHF noise with color control max. Adjust R730B so that color snow just disappears. Check with color signal to assure setting is not killing on color.

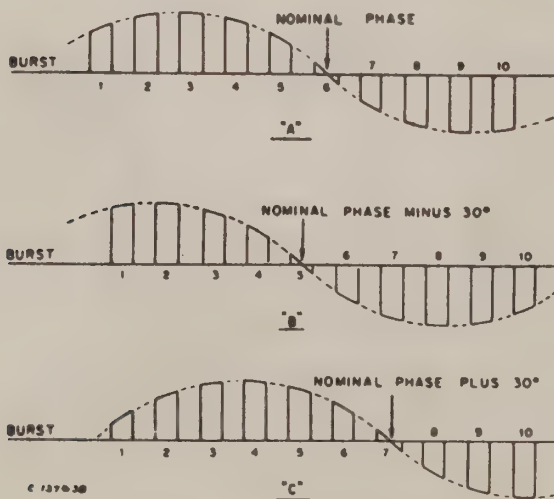


Figure 23—Waveforms at "R-Y" Output

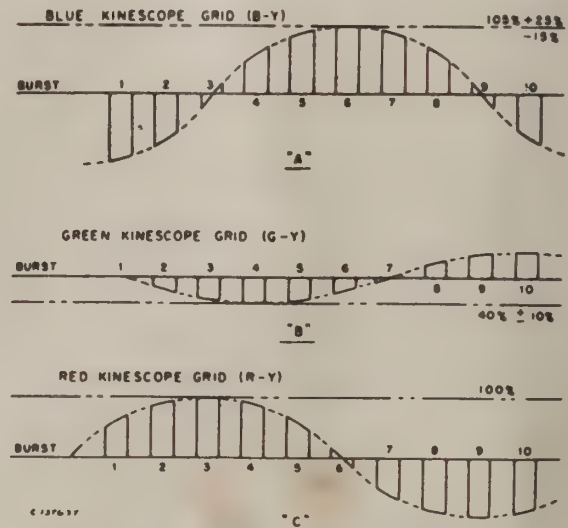


Figure 24—Waveforms at Picture Tube Grids

SEALED CIRCUIT ASSEMBLIES - PHANTOM VIEWS



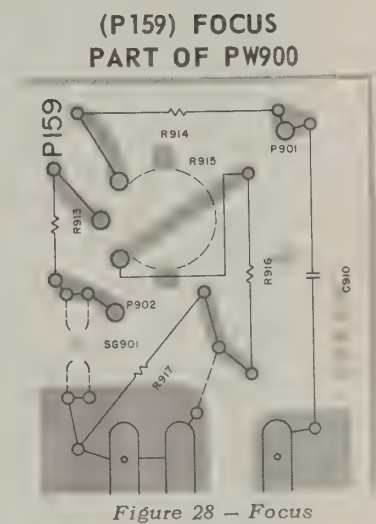
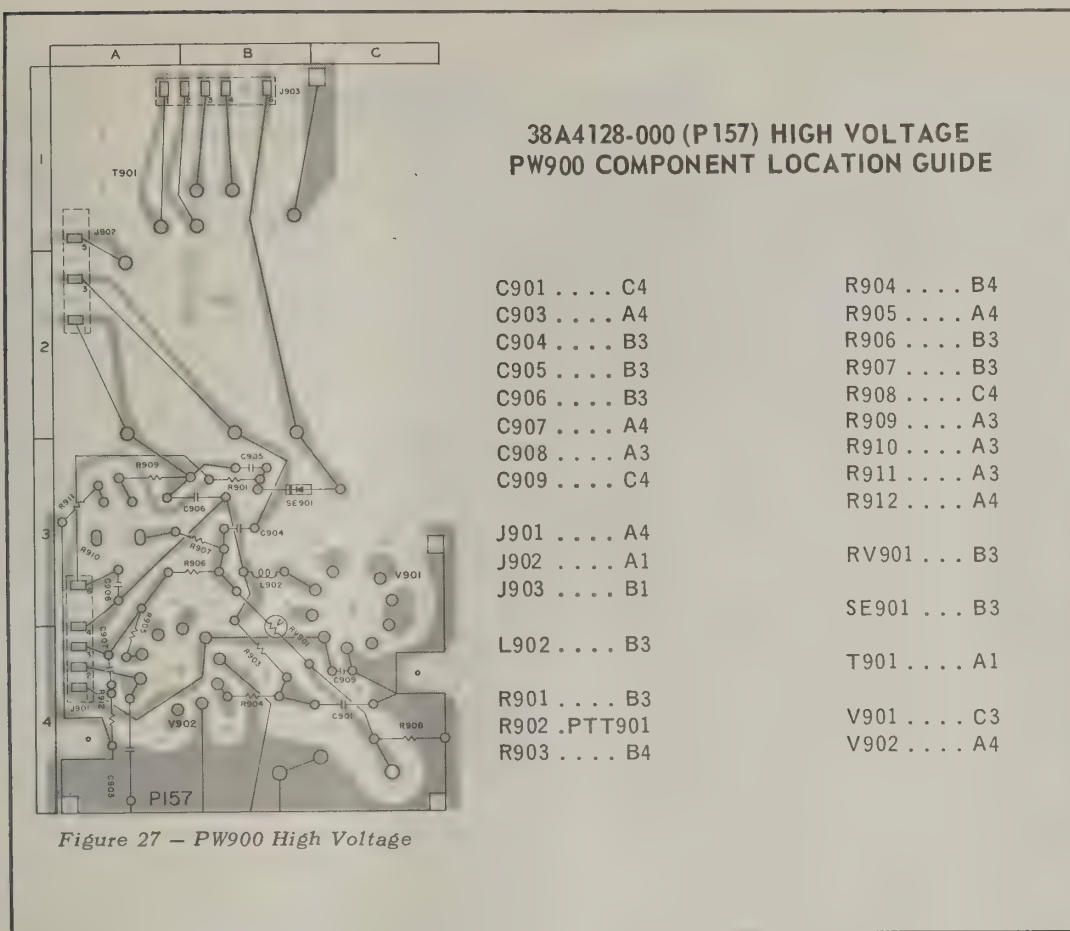
Figure 25 - PW300 Pix I-F Sound Board

38A4341-000 (P176) PIX I-F - SOUND BOARD PW300 COMPONENT LOCATION GUIDE

C301	C2	C326	A3	CR301	B3	L311	B4	R319	B5	R341	A2	SG301	B5
C302	C1	C327	A2	DL301	C3	L312	A2	R320	C4	R342	B2	SG302	B5
C303	C1	C328	A2	J301	C5			R321	C4	R343	B3	SG303	B5
C305	B2	C329	A3	J302	A5	Q301	B4	R322	C4	R344	B2		
C306	C2	C330	A4	J303	A2	Q302	B4	R323	C3	R345	A2	T301	C3
C307	C2	C332	A4	J304	C1			R324	C3	R346	A1	T302	A1
C308	B1	C333	A4	J305	C2	R301	C1	R325	C3	R347	A1	T303	A2
C309	C2	C334	A4	J306	B3	R302	C1	R326	B4	R348	C1	T304	A3
C311	B3	C335	B4	J307	B5	R303	C2	R327	A4	R349	A1	T305	A4
C312	C3	C336	C3	J308	B5	R304	B1	R328	A5	R350	A2	T306	C4
C314	B4	C337	C4	J309	B5	R306	B1	R329	B4	R351	A2		
C315	A3	C338	C3			R307	B2	R330	B5	R352	A1	TP301	A4
C316	A3	C339	B4	L301	B2	R308	C2	R331	A5	R353	A1	TP302	A1
C317	B1	C340	B3	L302	B3	R310	B2	R332	A5	R354	B1		
C318	A1	C341	A2	L303	A4	R311	B3	R333	B4	R355	B2		
C319	A1	C342	A3	L304	B3	R312	B3	R334	A4	R356	C4	V301	C1
C320	A1	C343	A3	L305	A1	R313	C4	R335	A4	R357	C3	V302	C2
C321	A1	C344	B2	L306	A4	R314	C4	R336	A3	R358	B4	V303	B3
C322	B2	C345	B1	L307	A4	R315	B5	R337	B4			V304	A1
C323	A1	C346	B2	L308	B4	R316A	A5	R338	B4	S301	C5	V305	A2
C324	A2	C347	B4	L309	C3	R316B	B5	R339	A3			V306	A3
C325	A2			L310	C3	R318	B5	R340	A3	SD301	B5	V307	C4

38A4293-000 (P169) CHROMA BOARD PW700 COMPONENT LOCATION GUIDE

20



NOTE: Symbols P901, J901, P902 & J902 appear on both the P159 focus board and the P157 H.V. board assys. and schematic.

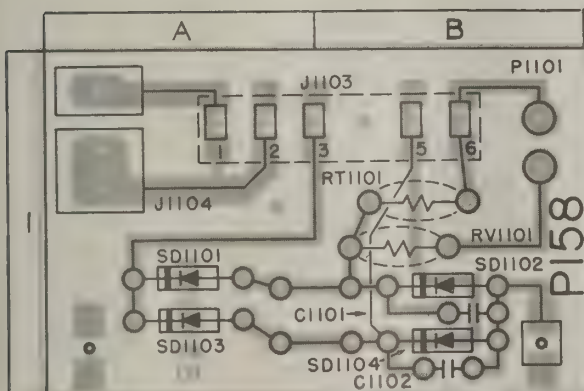


Figure 29 – PW1100 Power Supply

38A4129-000 (P 158) POWER SUPPLY PW1100 COMPONENT LOCATION GUIDE

C1101 B1	RT1101 B1
C1102 B1	RV1101 B1
J1103 B1	
J1104 A1	SD1101 A1
	SD1102 B1
P1101 B1	SD1103 A1
	SD1104 B1

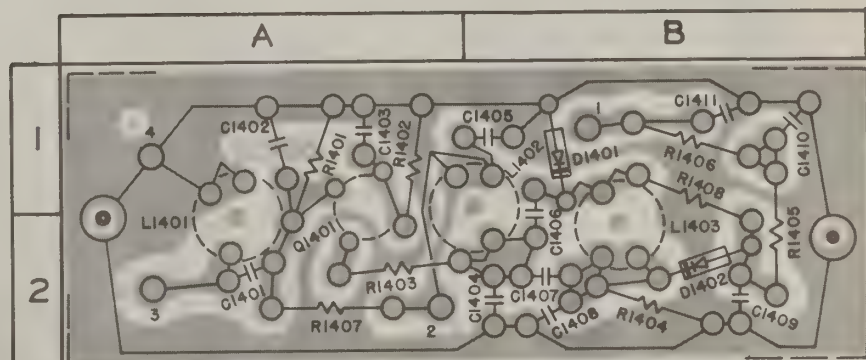


Figure 30 - PW1400 Auto-Fine Tuning

38A4184-000 (P161) AUTO-FINE TUNING PW1400 COMPONENT LOCATION GUIDE

C1401 A2	C1408 B2	L1401 A2	R1402 A1
C1402 A1	C1409 B2	L1402 B1	R1403 A2
C1403 A1	C1410 B1	L1403 B2	R1404 B2
C1404 B2	C1411 B1		R1405 B2
C1405 B1		Q1401 A2	R1406 B1
C1406 B2	D1401 B1		R1407 A2
C1407 B2	D1402 B2	R1401 A1	R1408 B1

SEALED CIRCUIT ASSEMBLIES

38A4342-000 (P177) DEFLECTION PW500 COMPONENT LOCATION GUIDE

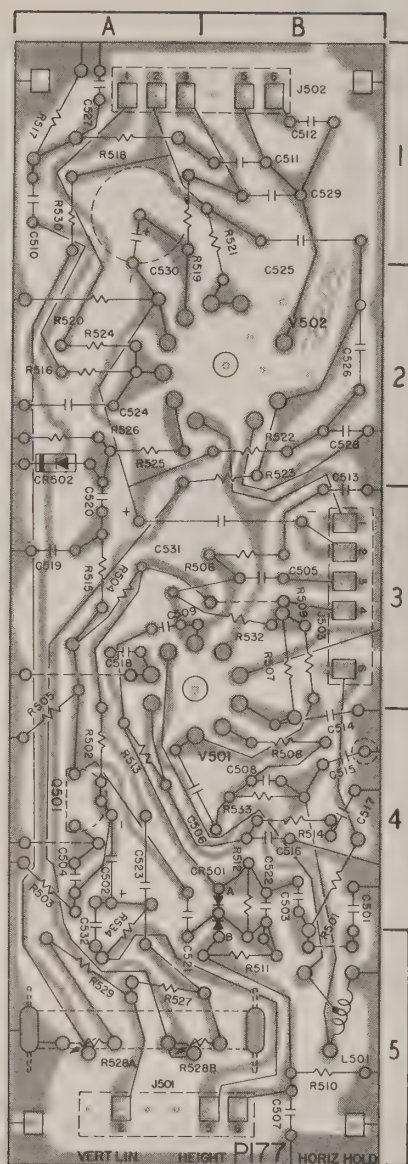


Figure 31 – PW500 Deflection

C501 B4	L501 B5
C502 A4	
C503 B4	Q501 A4
C504 A4	
C505 B3	R501 B4
C506 B4	R502 A4
C507 B5	R503 A
C508 B4	R504 A3
C509 A3	R505 A4
C510 A1	R506 B3
C511 B1	R507 B3
C512 B1	R508 B4
C513 B3	R509 B3
C514 B4	R510 B5
C515 B4	R511 B5
C516 B4	R512 B4
C517 B4	R513 A4
C518 A3	R514 B4
C519 A3	R515 A3
C520 A3	R516 A2
C521 A4	R517 A1
C522 B4	R518 A1
C523 A4	R519 A1
C524 A2	R520 A2
C525 B1	R521 B1
C526 B2	R522 B2
C527 A1	R523 B2
C528 B2	R524 A2
C529 B1	R525 A2
C530 A1	R526 A2
C531 B3	R527 A5
C532 A5	R528 A,B . . A5
CR501 . . . B4	R529 A5
CR502 . . . A2	R530 A1
	R532 B3
J501 A5	R533 B4
J502 B1	R534 A5
J503 B3	V501 B4
	V502 B2

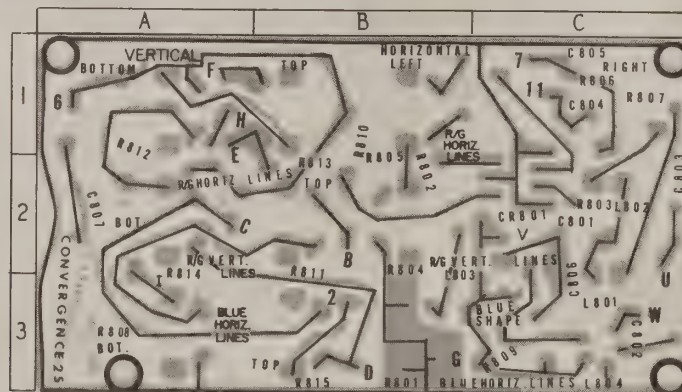


Figure 32 – PW800 Convergence

38A4131-000 (P160) CONVERGENCE PW800 COMPONENT LOCATION GUIDE

C801 C2	CR801 . . . C2	R802 B2	R809 C3
C802 C3		R803 C2	R810 B1
C803 C2	L801 C3	R804 B2	R811 B2
C804 C1	L802 C2	R805 B1	R812 A1
C805 C1	L803 B2	R806 C1	R813 B2
C806 C2	L804 C3	R807 C1	R814 A2
C807 A2	R801 B3	R808 A3	R815 B3

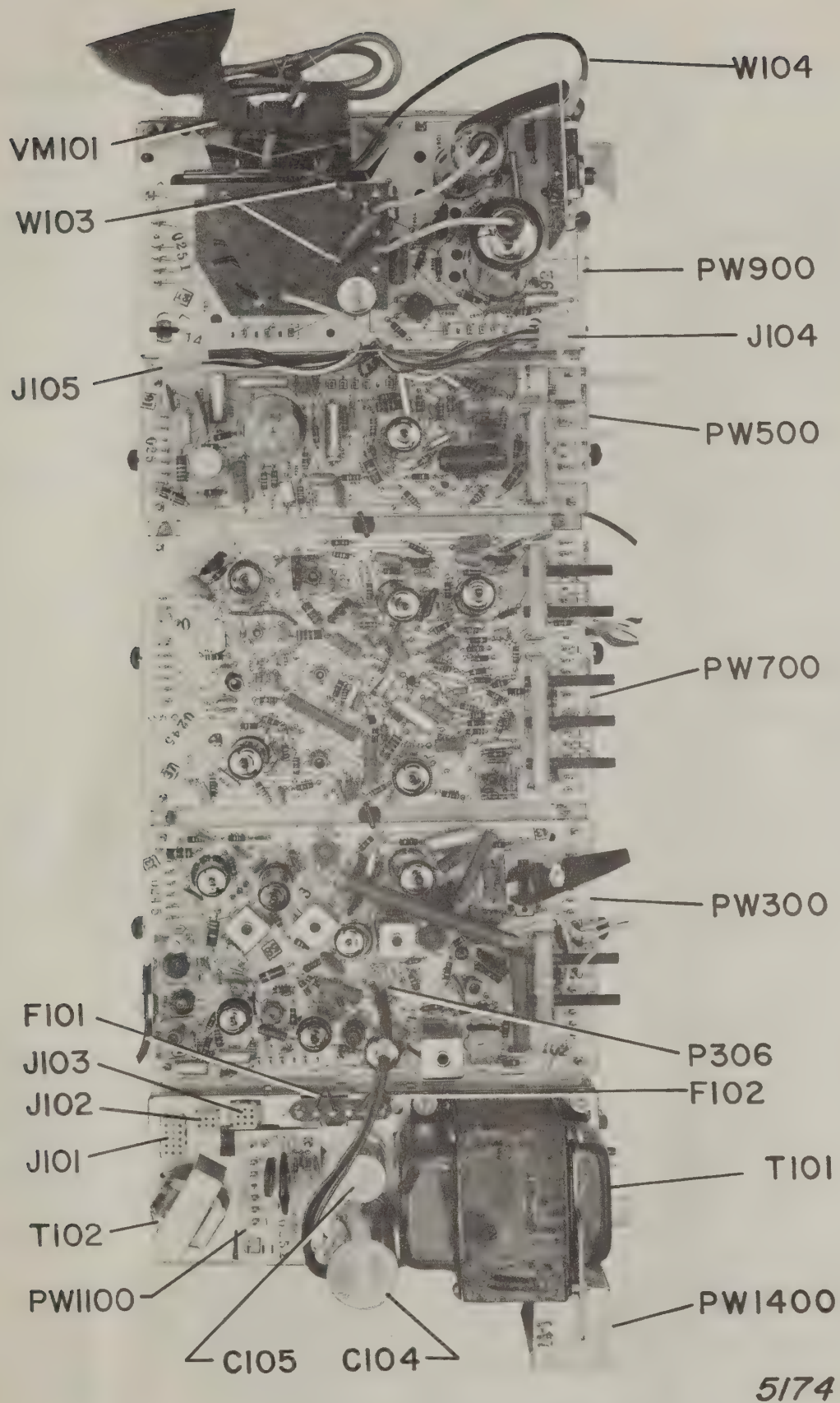


Figure 33 – Top Chassis Component Location Guide

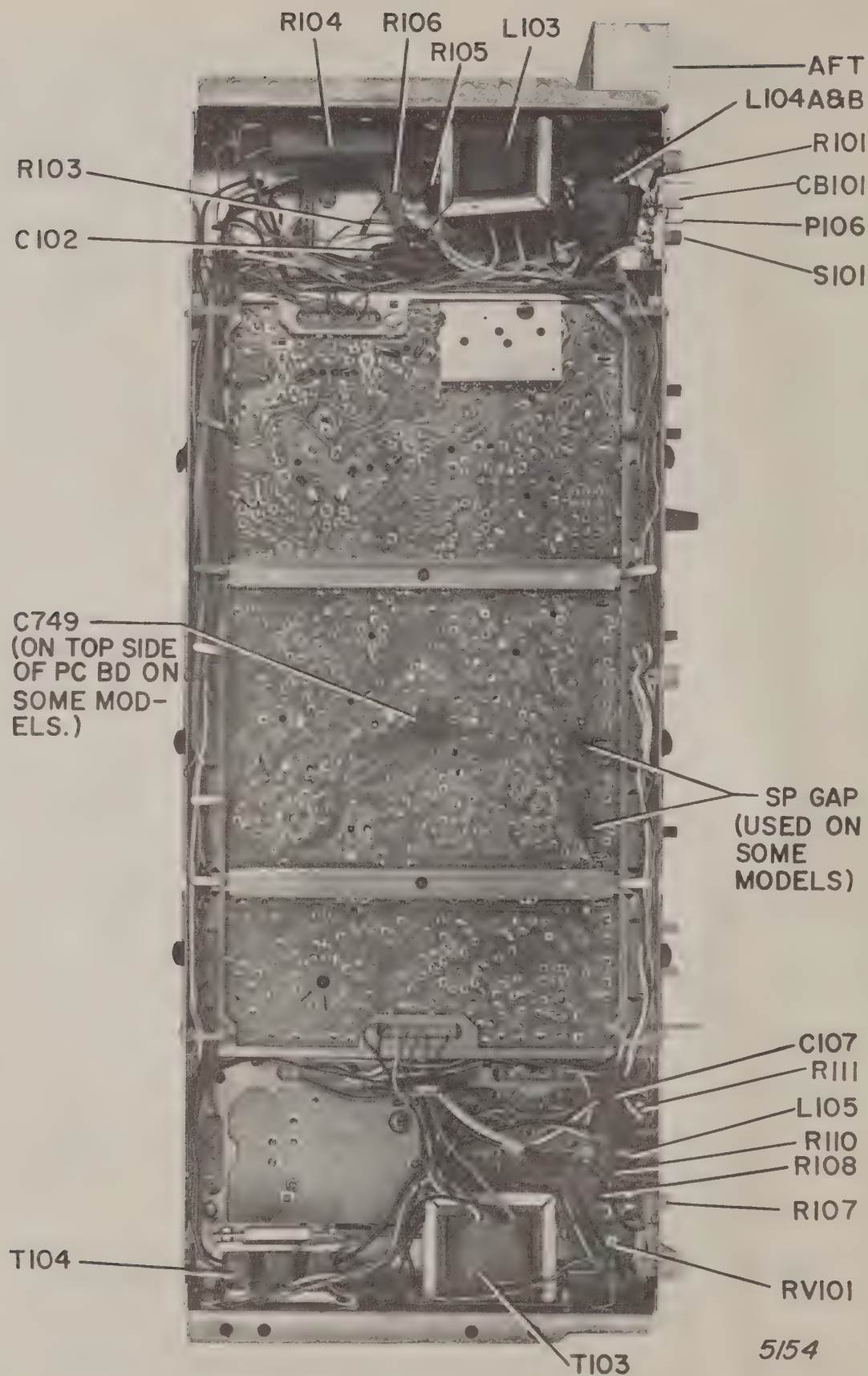
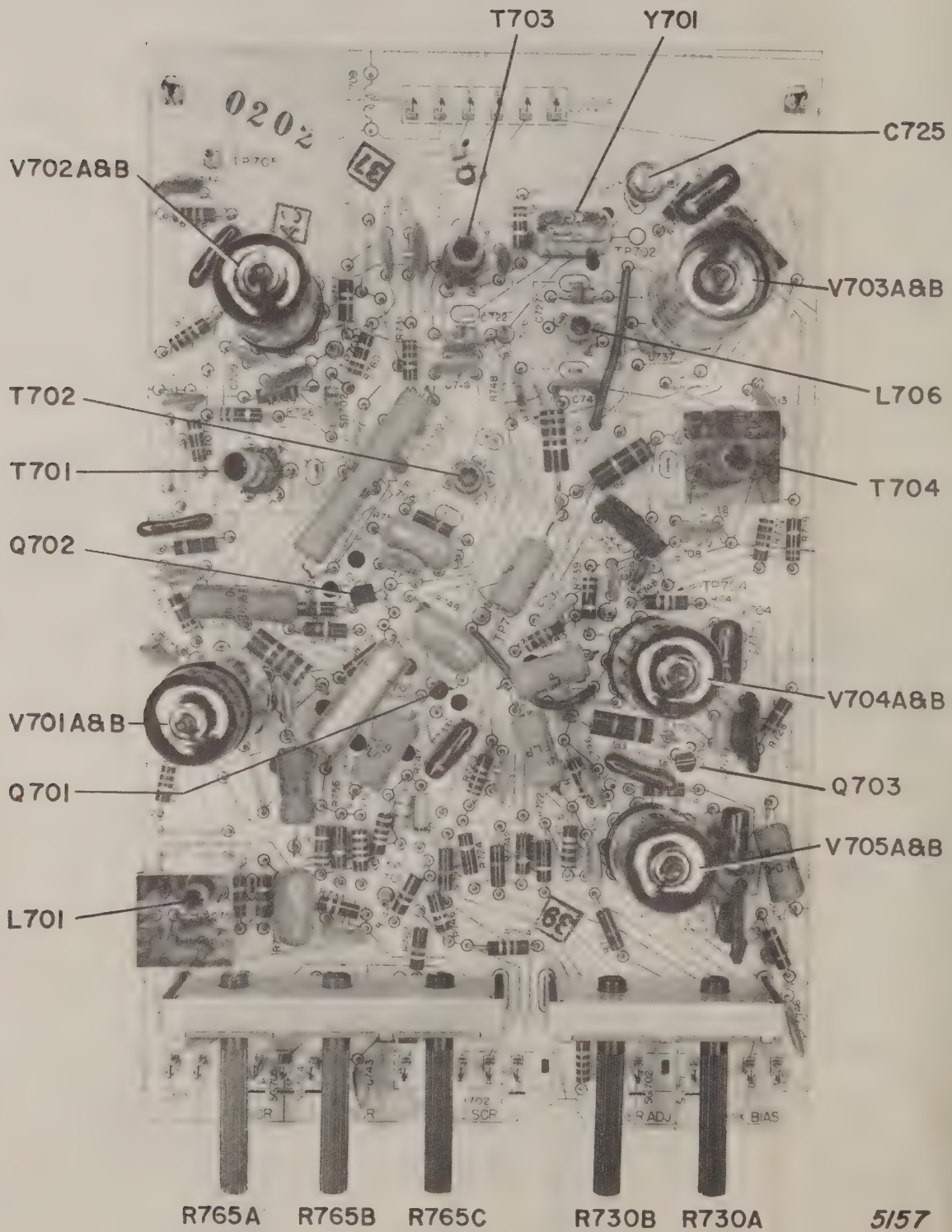


Figure 34 - Bottom Chassis Component Location Guide

PW700 BOARD PICTORIAL
38A4293-000 (P169) CHROMA



A detailed black and white photograph of a complex electronic circuit board, likely a military or scientific instrument. The board is populated with numerous components including resistors, capacitors, integrated circuits, and a large central circular component. Various labels such as R522, C524, and C528 are visible, along with a large circular component labeled '501'. The board is densely packed with components, and the overall appearance is that of a high-precision electronic assembly.

- L 501

Q501

R528B

5158

81

VERTICAL

CONVINCENCE

P13

5266

814

808

R812

R813

R805

R804

L802

L801

L804

L803

R801

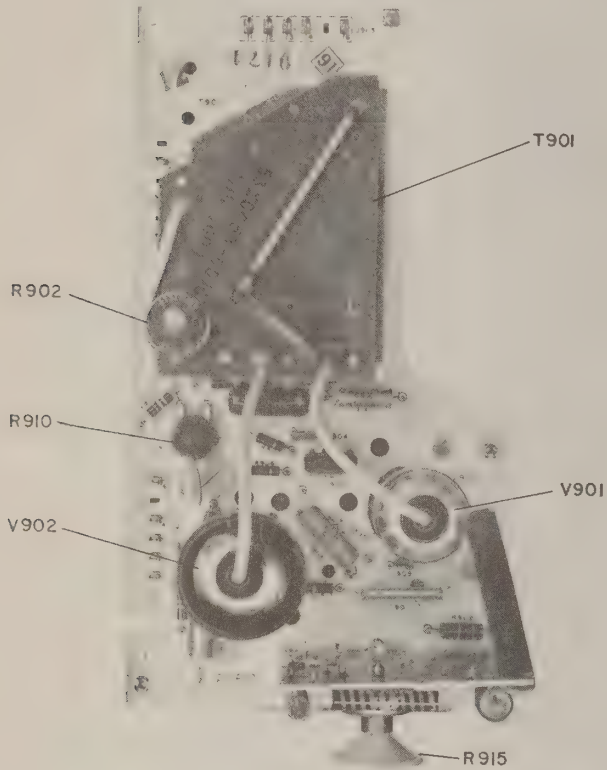
R811

R815

5266

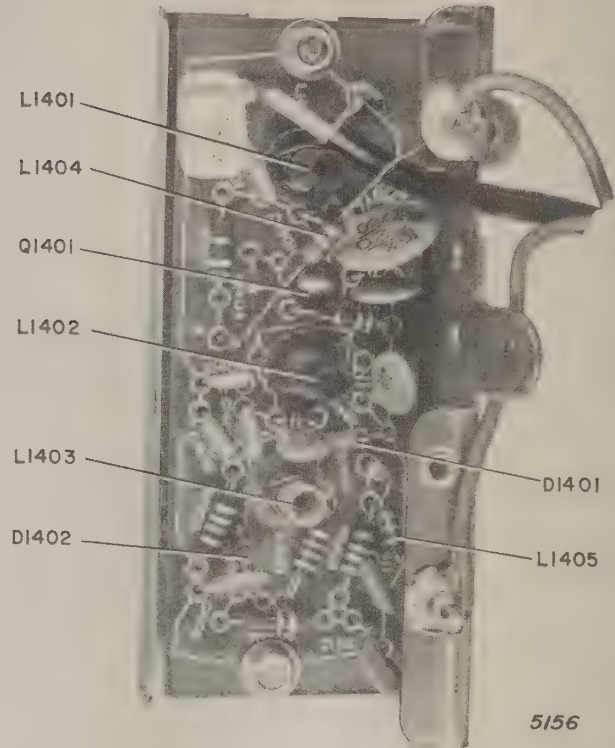
PICTORIALS

PW 900 BOARD
38A4128-000 (P157) HIGH VOLTAGE
INCLUDING (P159) FOCUS BOARD



5155

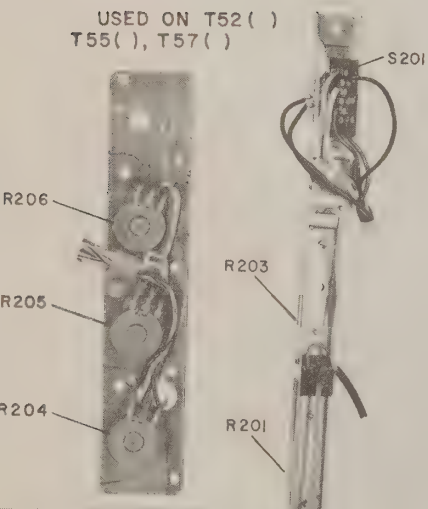
PW 1400 BOARD
38A4184-000 (P161) AUTO. FINE TUN.



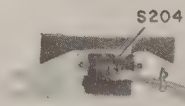
5156

AUXILIARY & SECONDARY CONTROLS

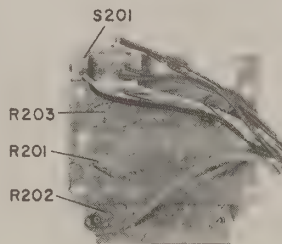
USED ON T52()
T55(), T57()



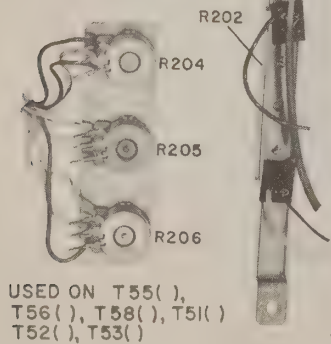
USED ON
T51()
T53()
WHEN SPEC-
IFIED



USED ON T56()

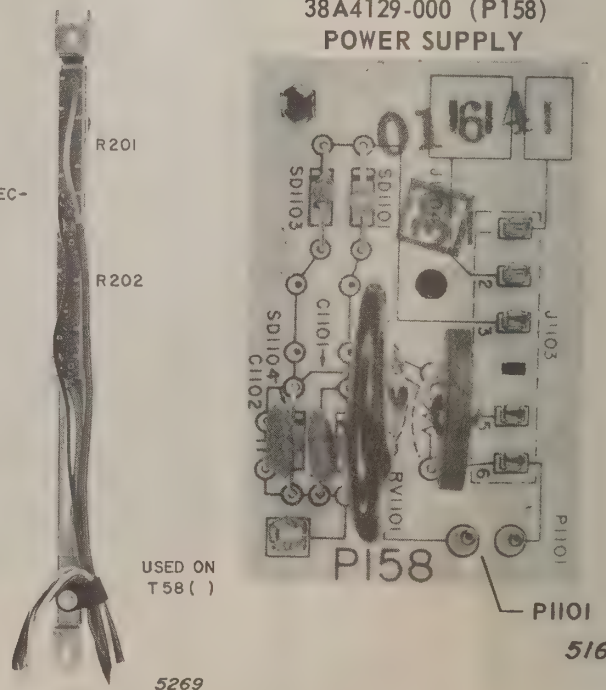


USED ON
T51(), T53()



5270

PW 1100 BOARD
38A4129-000 (P158)
POWER SUPPLY



USED ON
T58()

5269

5160

VHF TUNER PARTS LIST

All VHF parts are identical except fine tuning shaft and shaft and coil assemblies. See breakdown below

WGEC-25A1282-001 – STANDARD KOLLSMAN NO. SBRCA-324

WGEC-25A1282-002 – STANDARD KOLLSMAN NO. SBRCA-318

WGEC-25A1282-003 – STANDARD KOLLSMAN NO. SBRCA-331

RESISTORS

Ref. No.	Std. Kolls. Part No.	Ohms	Watts	Tolerance
R-207	12SAE562M	5.6K	1.0	20%
R-208	12WAE392K	3.9K	0.5	10%
R-209	12TAE3R9K	3.9	0.5	10%
R-210	12TAE471M	470	0.5	20%
R-211	12TAE473M	47K	0.5	20%
R-212	12TAE224M	220K	0.5	20%
R-213	12TAE102M	1K	0.5	20%
R-214	12SAE472M	4.7K	1.0	20%
R-215	12WAE473M	47K	0.25	20%
R-216	12WAE471K	470	0.25	10%
R-217	12TAE155K	1.5M	0.5	10%
R-218	12TAE473K	47K	0.5	10%
*R-219 }	340X3273-810	27K	0.5	10%
*R-220 }				
R-221	12TAE475K	4.7 Meg	0.5	10%

CAPACITORS

Ref. No.	Std. Kolls. Part No.	Capacity	Tolerance
C-202	13L6GP150J	15 pf	±5%
C-203	13M-063	47 pf	±10%
C-204 }	31B-902-023	0.5-4.5pf	Trimmer
C-205 }			
C-211 }	13M-035-()	1K pf	GMV
C-206 }			
C-207 }			
C-208 }			
C-209 }			
C-210 }			
C-212 }			
C-213 }			
C-214 }			
C-216 }			
C-217 }			
C-218 }			
C-219 }			
C-225 }			
C-215	13L6X102Z	1K pf	
*C-220	45X0534-001	5 pf	10 V N.P. Electrolytic
C-221 }	13P-012-()Quad	27 pf	±7.5%
C-222 }			
C-223 }			
C-224 }			

*W.G.E.C. Part Nos.

TRANSFORMERS & COILS

Ref. No.	Std. Kolls. Part No.	Description
L-201 }	Part of Ch. #1 UHF Stick	
L-202 }		
L-203 }	VHF Coil Board (Channels 2 thru 13) Assembly	
L-204 }		
L-205 }		
L-206 }		
L-207 }		
L-209	34A-1150-022	Choke
L-211	31U-648-001	I-F Coil
L-212	25A-249-018	Screen Coil
L-213	25A-255-007	Tap Coil
L-214 }	Part of T201	
L-215 }		
L-216 }		
L-217	31T-3251-092	Filament Wire
T-201	31T-4460-010	Ant. Input Assembly

DIODES

Ref. No.	Std. Kolls. Part No.	Description
D-201	24E-001-()	Diode, Varactor

MISCELLANEOUS

Item No.	Std. Kolls. Part No.	Description
1	6HA5	Tube, R-F Amp.
2	16S-059	Tube, Shield (6HA5)
3	6GJ7	Tube, R-F Oscillator & Mixer
4	16S-055-002	Tube Shield (6GJ7)
5	16S-060-001	
6	31U-648-001	I-F Coil Assembly
7	31B-206-016	Trimmer Assembly (2 used)
8	9YS436-10PC-S-7	Screw, Trimmer
9	10E-408	Nut, Trimmer
10	31B-902-023	Dowel, Trimmer, .5-4.5pf (2 used)
11	9B-810	Screw, Mounting
12	23A-362-001	Detent Spring
13	27E-111	Detent Ball
14	23A-284-003	Drum Retaining Spring
15	11R-019	Limiter Ring
16	23A-308-001	Spring, Slide Return
17	31T-4855-005	Preset Slide Assembly
18	19B-284	Pinion, Driver
19	19B-310-002	Slide, Preset
20	19B-206-001	Gear, Driven
21	19B-205	Idler Gear
22	31T-4508-606	Clutch Assembly
23	19B-217-001	Drive Gear
24	23A-360	Spring, Clutch
25	16Z-022-001	Ring, Clutch
26	11G-090	Washer, Tongue
26	15S-194-149	Shaft, Fine Tuning, Alum. (25A1282-002 Tuner)
26	15S-194-230	Shaft, Fine Tuning, Alum. (25A1282-001 Tuner)
26	15S-194-231	Shaft, Fine Tuning, Alum. (25A1282-003 Tuner)
27	11R-022	Retaining Ring
29	31T-4724-193	Shaft & Coil 25A1282-001 Supp. Assy. Tuner
29	31T-4725-127	Shaft & Coil 25A1282-002 Supp. Assy. Tuner
29	31T-4724-199	Shaft & Coil 25A1282-003 Supp. Assy. Tuner
30	14K-749	Bottom Cover
31	9W-507	Slug, Tuning
32	31M-2AH	Channel Coil Assembly
thru	thru	
43	31M-13AH	Channel 2 thru 13
44	31T-4730-N049	#1 Strip Assembly
45	31T-4720-139	Stator Assembly
46	19B-258-002	Lock, Pin
47	{ 23A-323 (8) 23A-344-001 (1) 23A-344-002 (2)	Stator Contact
48	23A-324-001	Ground Spring
49	31T-4460-010	Antenna Input Ass'y.
*	14K-613-005-6	Clip Slug, Tuning (31)
*		Not shown on Pictorial

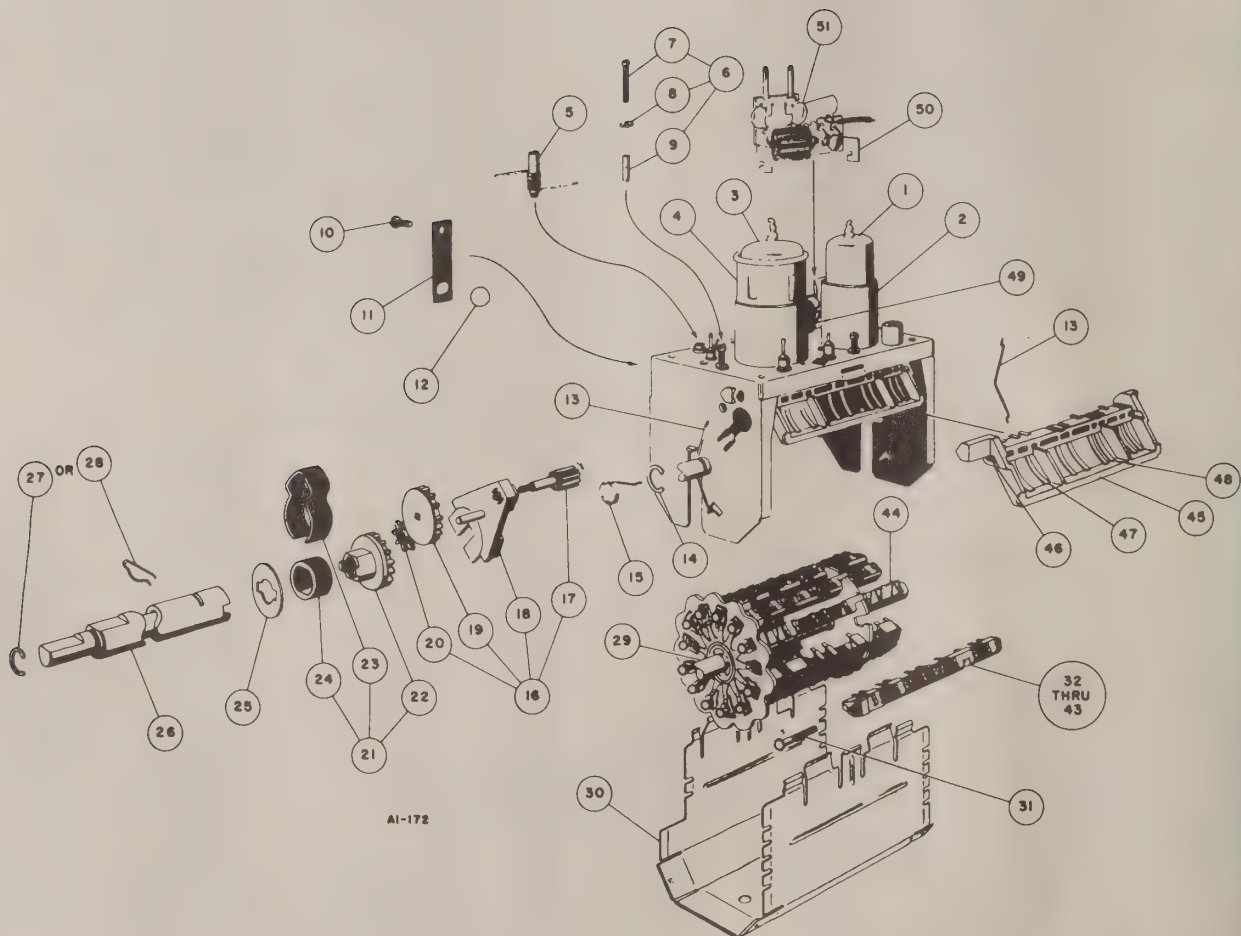
VHF TUNER PARTS LIST

All VHF parts are identical except fine tuning shaft and shaft and coil assemblies. See breakdown below

WGEC-25A1282-001 – STANDARD KOLLSMAN NO. SBRCA-324

WGEC-25A1282-002 – STANDARD KOLLSMAN NO. SBRCA-318

WGEC-25A1282-003 – STANDARD KOLLSMAN NO. SBRCA-331



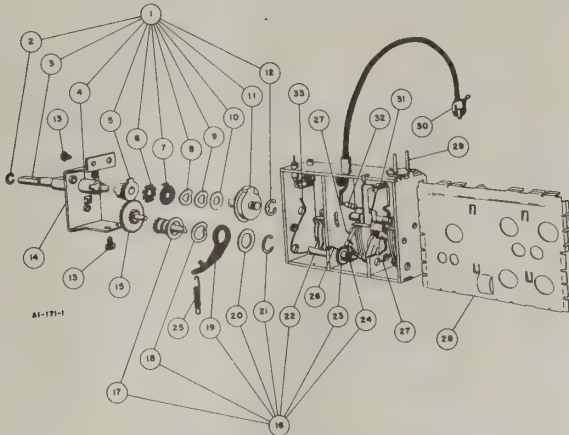
UHF TUNER PARTS LIST

All UHF parts are identical except for drive assemblies. See breakdown below.

WGEC-25A1275-001 – STANDARD KOLLSMAN NO. AUTA-063

WGEC-25A1275-002 – STANDARD KOLLSMAN NO. AUTA-091

WGEC-25A1275-003 – STANDARD KOLLSMAN NO. AUTA-095



RESISTORS

Ref. No.	Std. Kolls. Part No.	Ohms	Watts	Tolerance
R222	12TAE102K	1 K	0.5	±10% . . .
R223	12TAE392K	3.9 K	0.5	±10% . . .
R224	12WAE472K	4.7 K	0.25	±10% . . .
R225	12WAE183K	18 K	0.25	±10% . . .
*R226	340X3105-810	1 Meg	0.5	±10% . . .
R227	12WAE393K	39 K	0.25	±10% . . .
R228	12WAE105K	1 Meg	0.25	±10% . . .
R229	12TAE684M	680 K	0.5	±20% . . .

*WGEC Part No.

CAPACITORS

C226	13M-106-()	220pf	±20%
C227	31B-902-017	2-8pf	Trimmer
C228	13M-035	1Kpf	GMV
C231			
C235			
C229	13M-102-()	1Kpf	
C230	13M-058-()	30pf	
C232	13X0009	0.5mf	N750
C233	13R-065	2.3pf	
C234A	Part of Gang Tuning		
C234B			
C234C			
*C237	80X0099-095	.001mf	

*WGEC Part No. and used on tuners with chassis stamped T511, T512, T531 & T532 ONLY.

COILS

L218	34A-1150-023	Coil
L219	25A-269	Coil, Input Loop
L220	31K-137-051	Coil, Preform Choke

SEMI-CONDUCTORS

Ref. No.	Std. Kolls. Part No.	Description
D202	24E-005-()	Diode
D203	24E-002-()	Diode
Q201	24T-016-(016)	Transistor

MISCELLANEOUS

Item No.	Std. Kolls. Part No.	Description
1	31T-4696-063	Drive Assembly (25A1275-001 Tuner)
1	31T-4696-091	Drive Assembly (25A1275-002 Tuner)
1	31T-4696-095	Drive Assembly (25A1275-003 Tuner)
2	11R-022	Retaining Ring
3	15S-249-022	Drive Shaft (25A1275-001 Tuner)
3	15S-249-047	Drive Shaft (25A1275-002-Tuner)
3	15S-249-049	Drive Shaft (25A1275-003 Tuner)
4	15S-245-039	Indicator Shaft (25A1275-002 Tuner)
4	15S-245-041	Indicator Shaft (25A1275-003 Tuner)
5	19B-279-005	Drive Gear/Shaft (25A1275-001 Tuner)
5	19B-244-001	Drive Gear (25A1275-002 & -003 Tuner).
6	14K-698-001	Ratchet Washer
7	14K-710-001	Drive Disc
8	11P-024	Bowed Washer
9	11P-024	Bowed Washer
10	11G-096	Flat Washer
11	19B-245	Cam
12	11R-029	"E" Ring
13	9B-802	Screw Bracket Mtg.
14	14K-725-003	Bracket Drive Mtg.
15	19B-248-001	Gear Idler
16	31T-4697-001	Jack Shaft Assembly
17	11G-100-001	Flat Washer
18	11P-021	Bowed Washer
19	14J-090-001	Cam Follower
20	11G-100-001	Flat Washer
21	11R-020	"C" Ring
22	19B-247	Jack Shaft
23	19B-246-003	Pinion
24	23B-001-001	Ring Compression
25	23A-340	Spring, Arm Follow
27	23A-346 (2)	Spring Bias, Rotor
28	14K-724-001	Cover
29	31T-4671-003	Antenna Input Assembly
30	31T-3134-131	Cable Assembly (25A1275-001 Tuner)
30	31T-3134-142	Cable Assembly (25A1275-002 & -003 Tuner).
31	9P-031	Mix Loop Pin
32	31T-4699-003	Diode Sleeve Assembly (25A1275-001 Tuner)
32	31T-4699-002	Diode Sleeve Assembly (25A1275-002-003 Tuner) . .
33	23A-339-001	Spring, Fine Tuning Shaft . . .

VHF TUNER PARTS LIST

All VHF parts are identical except for fine tuning shaft and shaft assemblies. See breakdown below.

WGEC-25A1283-001 - SARKES TARZIAN NO. 751-518

WGEC-25A1283-002 - SARKES TARZIAN NO. 751-521

WGEC-25A1283-003 - SARKES TARZIAN NO. 751-522

RESISTORS

Ref. No.	Sarkes-Tarzian Part No.	Ohms	Watts	Tolerance
R209	109-562	5.6K	0.5	±20%
R210	111-102	1.0K	0.5	±20%
R211	114-471	470	0.5	±20%
R212	111-473	47K	0.5	±20%
R213	111-472	4.7K	0.5	±20%
R214	111-562	5.6K	0.5	±20%
R215	111-223	22K	0.5	±20%
R216	111-473	47K	0.5	±20%
R217	111-102	1.0K	0.5	±20%
R218	111-224	220K	0.5	±20%
*R219 }	340X3273-810	27K	0.5	±10%
*R220 }				
R221	111-334	330K	0.5	±20%
*R222	340X4103-810	10K	1.0	±10%
R223	111-103	10K	0.5	±20%
R224	111-105	1.0 Meg	0.5	±20%

CAPACITORS

Ref. No.	Sarkes-Tarzian Part No.	Description
C201	235-779	7.7pf
C202	3176-279	2.7pf
C203 }	2033-27	1Kpf
C207 }		
C204	165-829	8.2pf
C205	3176-109	1.0pf
C206	227-829	8.2pf
C208	228-159	1.5pf
C209 }	335-1	1Kpf
C211 }		
C213 }		
C214 }		
C215 }		
C216 }		
C210	336-470	47pf
C212	1107-150	15pf
C217	1183-1	1Kpf
C218	214-1	1Kpf
*C220	45X0534-001	5pf 10V N.P. Electrolytic
C221 }	Part of T201	
C222 }		

*W.G.E.C. Part Nos.

TRANSFORMERS AND COILS

Ref. No.	Sarkes-Tarzian Part Nos.	Description
L201 }	Part of Chan.#1	UHF Stick
L202 }		
L203 }		
L204 }		
L205 }		
L206 }	Wound Channel Stick Assy. Ch. 2 thru Ch. 13	
L207 }		
L208 }		
L209 }		
L210 }		
L211 }	1165-11	Coil, Input
L212 }		
L213 }		
L214 }		
L215 }		
L216 }	372-3	Coil
L217 }		
L218 }		
L219 }		
L220 }		
L221 }	Part of T201	Antenna Trap Assy.
L222 }		
L223 }		
L224 }		
L225 }		
L226 }	4467-12	Coil, I-F
L227 }	1166-7	Coil, Screen
L228 }	4283-543	Antenna Trap Assy.

TRANSISTOR

Q201	7-29	Transistor
------	------	------------

MISCELLANEOUS

Item No.	Sarkes-Tarzian Part No.	Description
1	4283-543	Antenna Trap Assembly
2	4996-501	Balun Coil (Part of 4283-543)

MISCELLANEOUS (Con't.)

Item No.	Sarkes-Tarzian Part No.	Description
3	3140-3	RF Tube Shield
4		IF Test Point
5	4365-503	Mixer Tube Socket & Shield Assembly
6	2178-2	IF Output Phono Jack
7	4467-519	IF Coil
8		Mixer B+ Terminal
9	3747-2	Spring
10	3888-3	Plate
11	4009-1	Clip Retainer
12	4346-2	Yoke Stop
13	3737-4	Gear Shaft
14	1611-71	Washer
15	4503-4	Lever
16	2178-2	Phono Jack
17		Dummy Lug
18	4415-505	Stator Assembly
19		RF Test Point
20		UHF B+
21	4486-1	Tuning Screw Stop
22	3530-10	Detent Spring
23		U-V Cable
24	3738-4	Gear Drive
25	3563-210	Fine Tuning Shaft (25A1283-001)
25	3563-162	Fine Tuning Shaft (25A1283-002)
25	3563-211	Fine Tuning Shaft (25A1283-003)
26	3736-1	Clip Clutch
27		Channel Sticks (See Listing Wound Channel Sticks)
28	3745-8	Gear Screw
29	3784-696	Shaft Assembly (less sticks) (25A1283-001)
29	3784-628	Shaft Assembly (less sticks) (25A1283-002)
29	3784-700	Shaft Assembly (less sticks) (25A1283-003)
30	1864-1	Retainer
31	3316-3	Cover
32		AFC Terminal
51		AFC Back Bias Terminal
52		AFC Terminal
53		B+ Terminal
54	2178-2	Phono Jack
55		Antenna Input Assembly (Order Separately)
a.	5215-4	Contact Pins (2)
b.	4514-3	Input Loop, Wire
c.	4513-2	Input Case, Plastic
d.	111-185	Resistor 1.8 megohms
56	4798-4	Cover
57	4836-1	Spacer
58	4733-4	Bracket
59	2028-7	Screw (2)
60	4738-504	Clutch Assembly
61	3747-3	Spring
65	4741-533	Hub-Shaft Assembly
66	2465-1	Plate Stop
67	2466-10	Dial Shaft
68	2028-4	Screw (2)
69	4734-12	Bracket

WOUND CHANNEL STICKS

Item 27	Color	Part Number
Ch. #1	Brown	2869-513
Ch. #2	Red	4862-503
Ch. #3	Orange	4863-503
Ch. #4	Yellow	4864-503
Ch. #5	Green	4865-503
Ch. #6	Blue	4866-503
Ch. #7	Violet	4867-503
Ch. #8	Yellow	4868-503
Ch. #9	None	4869-503
Ch. #10	Black	4870-503
Ch. #11	Brown	4871-503
Ch. #12	Red	4872-503
Ch. #13	Orange	4873-503

Note: A few sticks have identical color codes. To identify, all low channel sticks have more windings than the high channel sticks with the same color code.

UHF TUNER PARTS LIST

All UHF parts are identical except for dial shaft and hub shaft assemblies. See breakdown on page 32.

WGEC-25A1277-001 – SARKES TARZIAN NO. 474-522

WGEC-25A1277-002 – SARKES TARZIAN NO. 472-514

WGEC-25S 1277-003 – SARKES TARZIAN NO. 472-516

RESISTORS

Ref. No.	Sarkes-Tarzian Part No.	Ohms	Watts	Tolerance
R225	106-154	150K	0.5	±20%
*R226	340X3154-810	150K	0.5	±10
R227	106-393	39K	0.5	±20%
R228	106-222	2.2K	0.5	±20%
R229	106-221	220	0.5	±10%
R230	106-122	1.2K	0.5	±20%
R231	114-332	3.3K	0.5	±20%
R232	111-185	1.8 Meg	0.5	±20%
R233	106-183	18K	0.5	±10%

*W.G.E.C. Part No.

COILS & CHOKES

Ref. No.	Sarkes-Tarzian Part No.	Description
L224	1164-1	Choke, Preform
L225	1155-12	Coil, I-F Preform
L226	4514-3	Coil, Input Loop

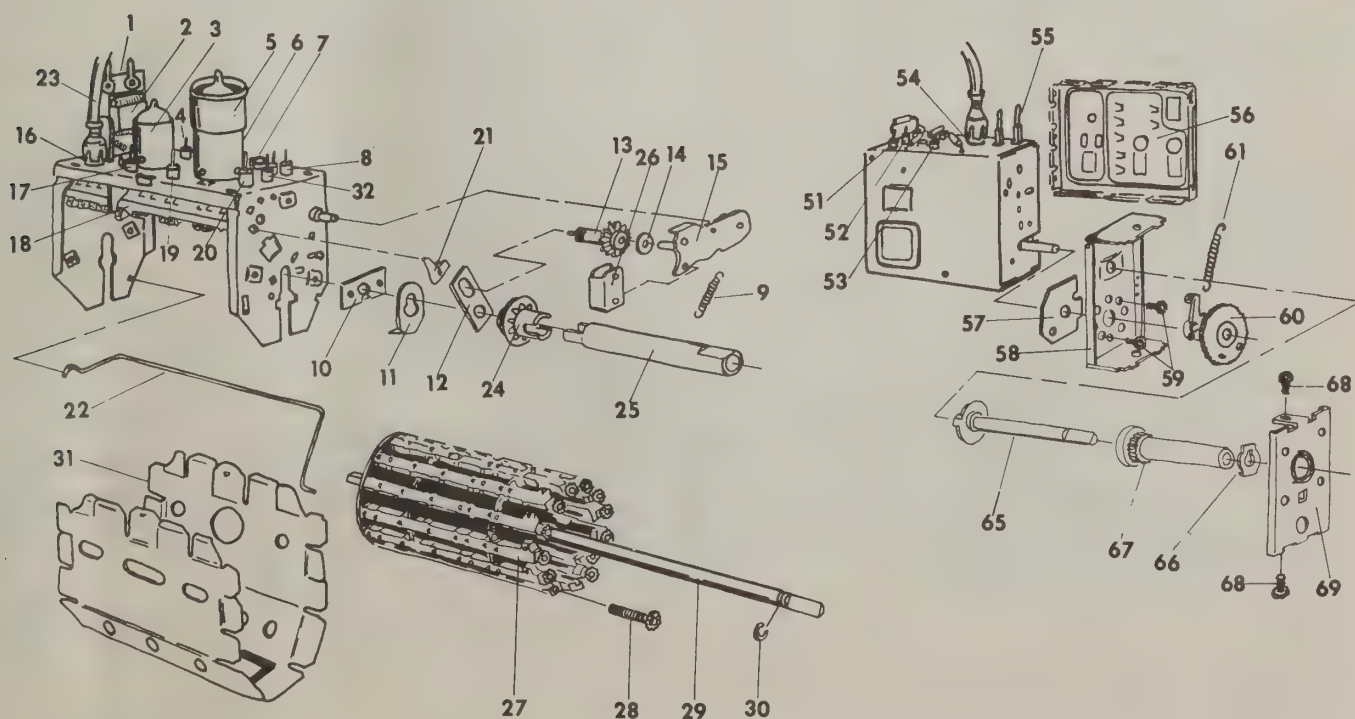
SEMI-CONDUCTORS

D201	1186-1	Diode
D202	47-4	Diode
Q202	7-4	Transistor

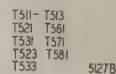
CAPACITORS

Ref. No.	Sarkes-Tarzian Part No.	Description
C223	1193-300	30pf
C226		
C224	1120-471	470pf
C225	214-1	1Kpf
C227	3176-478	0.47pf
C228	1126-2	4.5pf
C229	1126-3	5.4pf
C231		
C232		
C233		
C234A	1149-1	100pf
C234B		
C234C		
C235	1149-1	100pf
C236		

SARKES TARZIAN VHF-UHF TUNER PICTORIAL



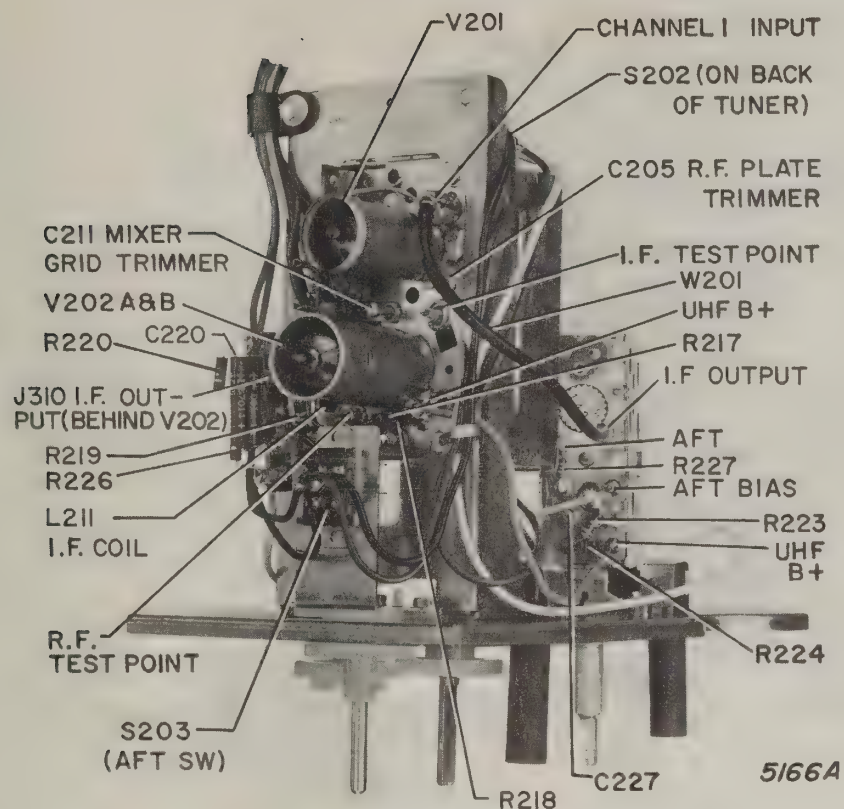
(See Parts List For Specific Chassis Stamping)



(See Parts List For Specific Chassis Stamping)

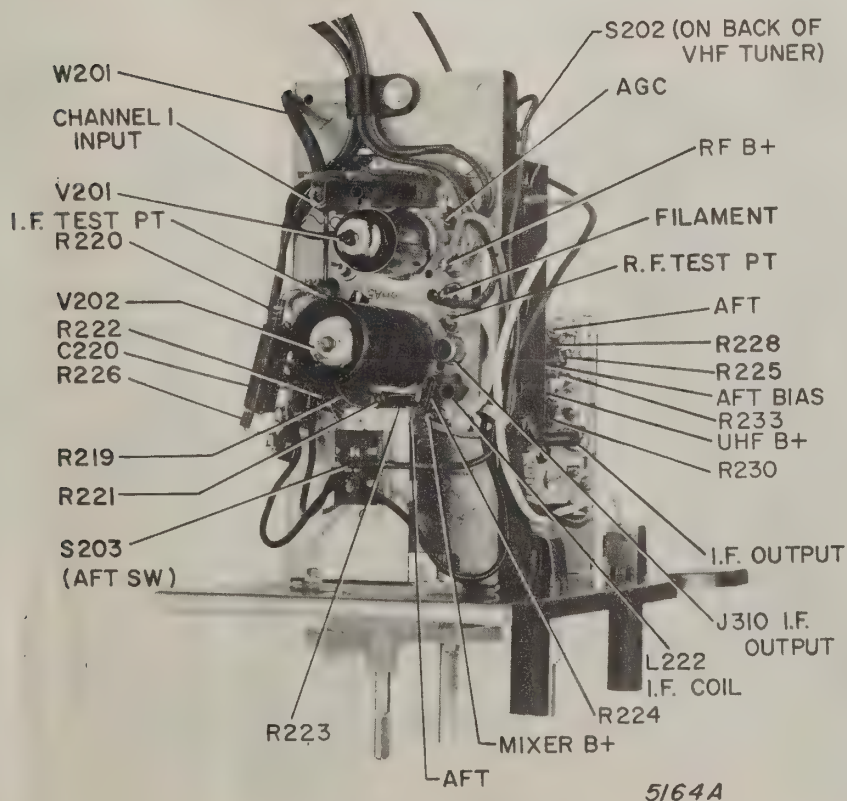


TUNER INFORMATION



25A1282-001
VHF TUNER &
25A1275-002
UHF TUNER
COMPONENTS &
ADJUSTMENTS

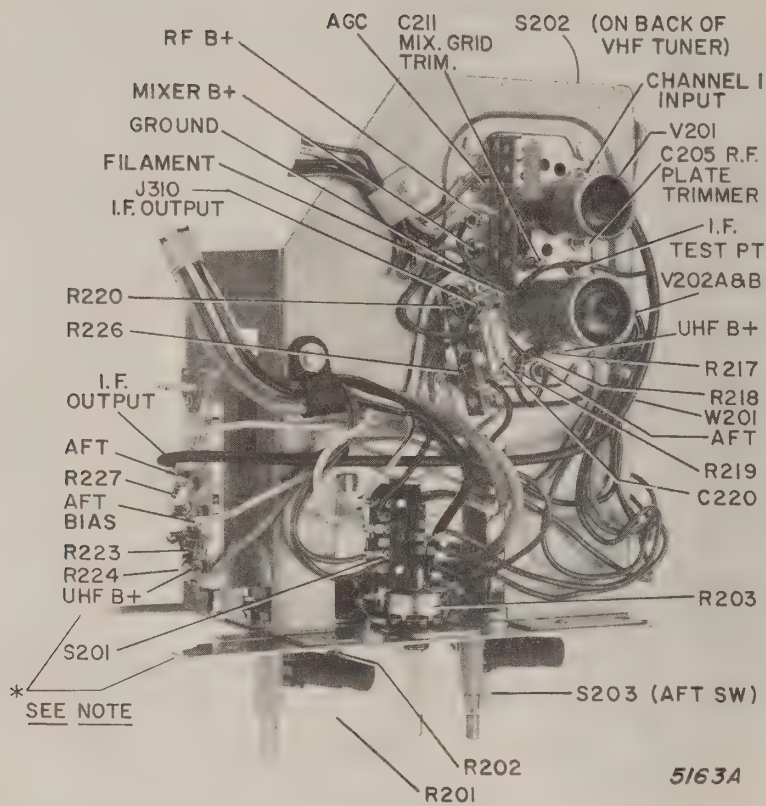
USED IN CHASSIS STAMPED
T511, T513, & T561



25A1283-001
VHF TUNER &
25A1277-002
UHF TUNER
COMPONENTS &
ADJUSTMENTS

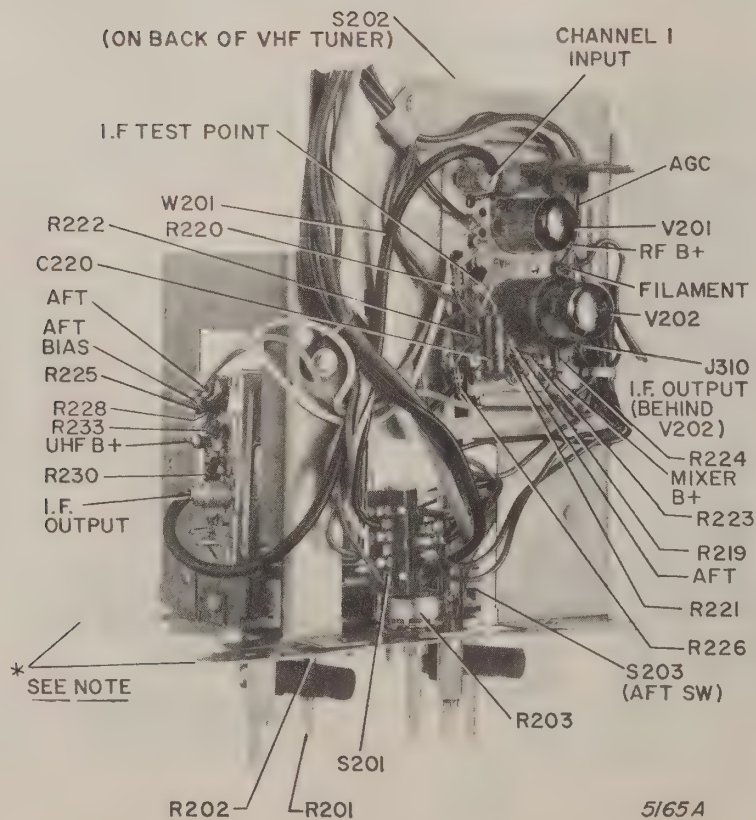
USED IN CHASSIS STAMPED
T512, T514 & T562

TUNER INFORMATION



25A1282-002
VHF TUNER &
25A1275-001
UHF TUNER
COMPONENTS &
ADJUSTMENTS

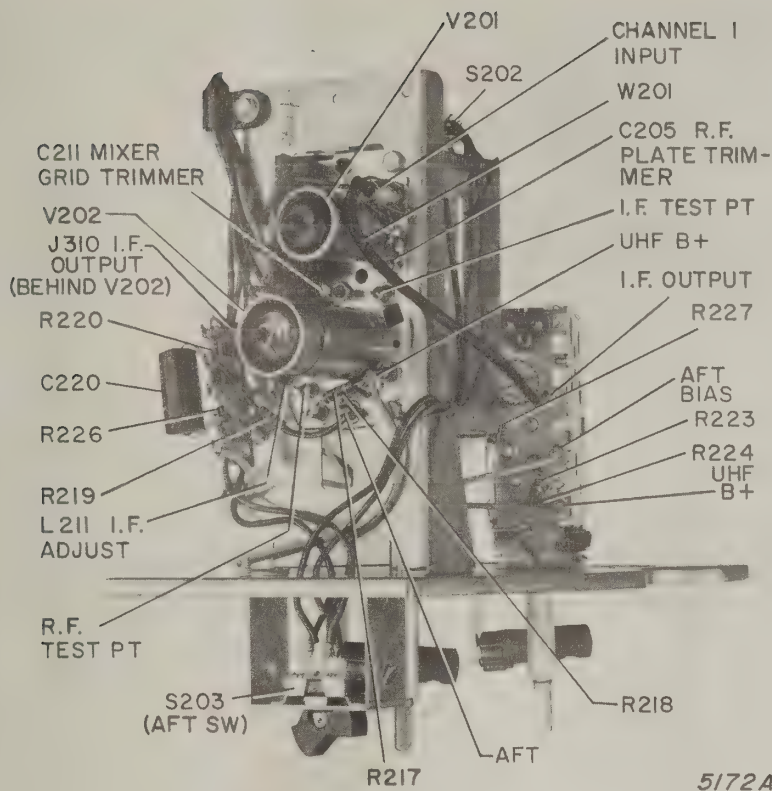
USED IN CHASSIS STAMPED
T521, T523 & T571



25A1283-002
VHF TUNER &
25A1277-001
UHF TUNER
COMPONENTS &
ADJUSTMENTS

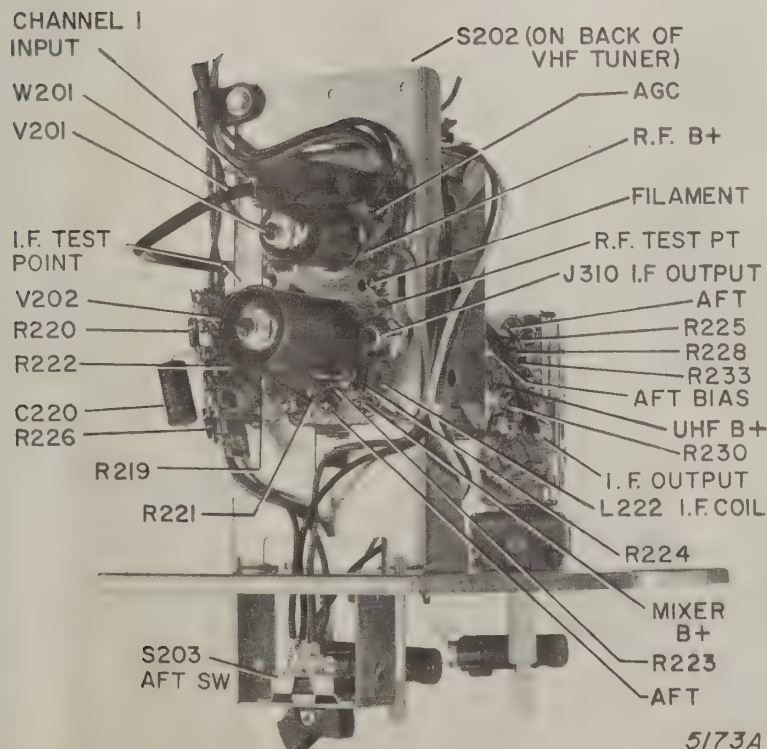
USED IN CHASSIS STAMPED
T522, T524 & T572

TUNER INFORMATION



25A1282-003
VHF TUNER &
25A1275-003
UHF TUNER
COMPONENTS &
ADJUSTMENTS

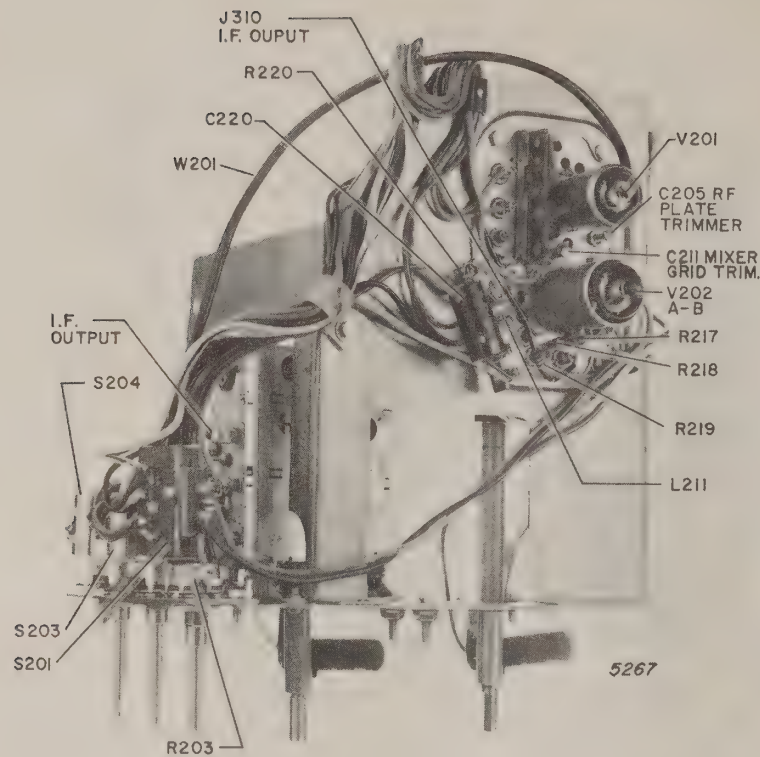
USED IN CHASSIS
STAMPED T531 & T533



25A1283-003
VHF TUNER &
25A1277-003
UHF TUNER
COMPONENTS &
ADJUSTMENTS

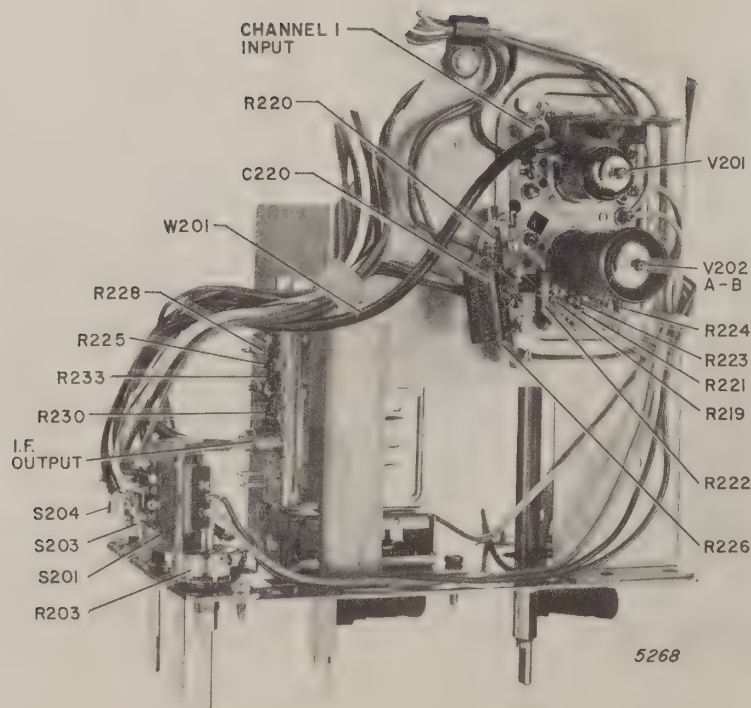
USED IN CHASSIS
STAMPED T532 & T534

TUNER INFORMATION



25A1282-002
VHF TUNER &
25A1275-001
UHF TUNER
COMPONENTS &
ADJUSTMENTS

USED IN CHASSIS
STAMPED T581



25A1283-002
VHF TUNER &
25A1277-001
UHF TUNER
COMPONENTS &
ADJUSTMENTS

USED IN CHASSIS
STAMPED T582

REPLACEMENT PARTS LIST

Use only **GENUINE** factory tested parts to insure service jobs you can depend on and to obtain original set performance. All Models use Chassis T50 Series (Stamped on Chassis Rear Apron).

NOTE: Part numbers may not be identical with those on factory parts; also, the electrical values of some replacement items may differ from the values indicated in the schematic diagram and parts list. The values sub-

stituted in any case are so chosen that operation will be either unchanged or improved. When ordering replacements, use only the part numbers listed.

CAPACITORS

REF. NO.	PART NO.	CAPACITY			
C101	46X0534-002	.047mf			Special.....
C102	342X1044-060	.1mf		600V	Mylar
C104A	45X0536-001	200mf		350V	
C104B		120mf		350V	Electrolytic....
C104C		80mf		350V	
C104D		5mf		50V	
C105A	45X0539-001	20mf		350V	Electrolytic...
C105B		20mf		350V	
C105C		50mf		50V	
C106	80X0096-029	100pf			Ceramic
C107	342X1842-020	.18mf		200V	Mylar.....
C108	80X0098-024	100pf		3KV	Ceramic
C220	45X0534-002	5mf		10VNP	Electrolytic....
C237	80X0001-000	.001mf		500V	Ceramic
(Used on Tuner with Assembly Stamped					
T51 () T53 () T56 ()					
C301	80X0099-035	6.8K pf	GMV	500V	Ceramic
C302	80X0099-095	.001mf	Z5F	2KV	Ceramic
C303	80X0099-061	.01mf	Z5U	1KV	Ceramic
C306	80X0099-002	.01mf	Z5U	500V	Ceramic
C309					
C312					
C323					
C304	Part of 9A2699-001				
C305	343X4734-029	.047mf		200V	Mylar
C307	80X0099-012	560pf	Z5F	500V	Ceramic
C308	80X0099-008	.001mf	Z5U	500V	Ceramic
C319					
C324					
C325					
C327					
C328					
C333					
C340					
C341					
C342					
C343					
C344					
C345					
C310	Part of 9A2698-001				
C311	80X0099-096	750pf	5% N2200	500V	Ceramic
C313	Part of 9A2697-001				
C314	80X0099-036	10pf	NPO	500V	Ceramic
C315	47X0656-000	1.5pf	±.25pf N3300		Ceramic Tubular
C316	47X0777-000	0.47pf		500V	Molded
C317	17A0279-002	3-15pf			Trimmer
C318	80X0099-050	150pf	5% NPO	500V	Ceramic
C320	349X2242-109	.22mf		100V	Mylar.....
C321	349X1032-109	.01 mf		100V	Mylar.....
C322	80X0099-051	680pf	N2200	500V	Ceramic
C326	80X0099-049	220pf	N1500	500V	Ceramic
C329	80X0099-054	2.2K pf	Z5F	500V	Ceramic
C330	80X0099-052	560pf	5% N1500	500V	Ceramic
C331	Part of 9A2667-003				
C332	80X0099-089	5pf	NPO	500V	Ceramic
C334					
C335	80X0099-048	100pf	N33	500V	Ceramic
C336	349X1042-109	.1mf		100V	Mylar.....
C337	343X1842-049	.18mf		400V	Mylar.....
C338	80X0099-023	390pf	Z5F	500V	Ceramic

CAPACITORS - (Cont'd.)

REF. NO.	PART NO.	CAPACITY	
C339	80X0099-020	680pf	Z5F 500V Ceramic
C346	47X0664-000	1Kpf	Z5U 500V Ceramic Tubular
C347	47X0663-000	7pf ±.5pf	NPO Ceramic Tubular
C501	80X0099-056	4.7K pf	Z5F 500V Ceramic
C505			
C519			
C502	45X0515-022	1 mf	15V Electrolytic ...
C503	80X0099-021	820 pf	Z5F 500V Ceramic
C504	80X0099-006	470pf	Z5F 500V Ceramic
C506	46X0535-002	560pf	630V Polystyrene...
C507	80X0099-010	.01mf	Z5U 500V Ceramic
C508	80X0099-003	.001mf	Z5F 500V Ceramic
C509	80X0099-080	100pf	Z5F 500V Ceramic
C510	80X0099-108	6.8K pf	Z5F 500V Ceramic
C511	343X1032-069	.01mf	600V Mylar
C512	80X0099-061	.01mf	Z5U 1KV Ceramic
C513	80X0099-042	220pf	N750 500V Ceramic
C514	343X4734-049	.047mf	400V Mylar
C515	46X0535-001	820pf	630V Polystyrene...
C516	80X0099-054	2.2K pf	Z5F 500V Ceramic
C528			
C517	343X4734-029	.047mf	200V Mylar
C518	80X0099-020	680pf	Z5F 500V Ceramic
C520	343X1032-049	.01mf	400V Mylar
C521	80X0099-086	56pf	5% NPO 500V Ceramic
C522	80X0099-082	10pf ±.5pf	NPO 500V Ceramic
C523	343X1544-060	.15mf	600V Mylar
C524	46X0535-003	2.2K pf	630V Polystyrene...
C525	343X1042-069	.1mf	600V Mylar
C526	343X4732-069	.047mf	600V Mylar
C527	80X0099-016	.001mf	Z5F 1KV Ceramic
C529	80X0099-115	.0033mf	Z5F 3KV Ceramic
C530	45X0540-001	10mf	350V Electrolytic
C531	45X0515-019	50mf	50V Electrolytic
C532	80X0099-017	.02mf	Z5U 500V Ceramic
C701	80X0099-036	10pf	NPO 500V Ceramic
C702	80X0099-058	33pf	N150 500V Ceramic
C709			
C713			
C703			
C721	349X1042-109	.1mf	100V Mylar
C735			
C704			
C711			
C723	80X0099-003	.001mf	Z5F 500V Ceramic
C726			
C729			
C705			
C706			
C710			
C717			
C718			
C731			
C732			
C734	80X0099-002	.01mf	Z5U 500V Ceramic
C736			
C738			
C740			
C745			
C746			
C750			
C751			

TO AVOID DELAY WHEN ORDERING PARTS PLEASE INCLUDE: MODEL & PART NOS.

REPLACEMENT PARTS LIST (Cont.)

CAPACITORS - (Cont'd.)

REF. NO.	PART NO.	CAPACITY			
C707	80X0099-111	130pf	N750	500V	Ceramic
C708	349X1032-109	.01mf		100V	Mylar
C712	343X1842-049	.18mf		400V	Mylar
C714	80X0099-041	33pf	N150	500V	Ceramic
C730					
C715					
C719	343X1032-049	.01mf		400V	Mylar
C739					
C720					
C722	47X0778-000	.82pf	5%	500V	Ceramic
C727					
C724					
C725	17A0279-002	3 to 15pf			Trimmer
C728	357X5591-251	590pf	5%	500V	Mica
C752					
C733					
C737	349X4732-109	.047mf		100V	Mylar
C741	80X0099-082	10pf	±.5pf	NPO	500V Ceramic
C742					
C743					
C744	80X0099-016	.001mf	Z5F	1K	Ceramic
C748	357X5331-351	330pf	5%	500V	Mica
C749	80X0099-080	100pf	Z5F	500V	Ceramic
C801	349X2242-100	.22mf		100V	Mylar
C802	352X1044-029	.1mf		200V	Mylar
C803	347X8232-049	.082mf		400V	Mylar
C804	347X1542-049	.15mf		400V	Mylar
C806					
C805					
C807	352X2742-029	.27mf		200V	Mylar
C901	347X1242-029	.12mf		200V	Mylar
C902	45X0515-008	10mf		10V	Electrolytic
C903	343X4734-049	.047mf		400V	Mylar
C904	80X0098-038	230pf		5KV	Ceramic
C905	45X0515-002	100mf		10V	Electrolytic
C908	80X0099-117	100pf	N750	1KV	Ceramic
C906	80X0099-010	.01mf	Z5U	2KV	Ceramic
C907					
C909					
C910	343 X3332-069	.033mf		600V	Mylar
C1101	80X0099-024	3.3K pf	Z5F	500V	Ceramic
C1102	80X0099-008	.001mf	Z5U	500V	Ceramic
C1401	46X0533-001	2500pf		10KV	Metalized Mylar
C1406	80X0099-016	.001mf	Z5F	1KV	Ceramic
C1407					
C1408					
C1409	80X0099-100	22pf		500V	Ceramic
C1410					
C1411					
C1404	80X0099-003	1K pf		500V	Ceramic
C1408	80X0099-015	15pf		500V	Ceramic
C1412	80X0099-060	1.5pf	±.25pf	500V	Ceramic
C1413	47X0784-001	1K pf		500V	Feed Thru

RESISTORS

REF. NO.	PART NO.	OHMS	WATTS	
R101	340X3225-841	2.2 meg.	0.5	Carbon
R102	340X3104-251	100K	0.5	Carbon
R103				
R104				
R105	43X0401-030	1.9K	20.0	Wirewound
R106	340X5271-841	270	2.0	Carbon
R107	340X9682-641	6.8K	7.0	Film
R108	40X0608-001	10		Vert. Centering Control
R109				
R110				
R111	340X3471-841	470	0.5	Carbon
R112	340X3681-841	680	0.5	Carbon
	40X0577-004	10K		Pin Amp Cont
	43X0450-043	4.7K	2.0	Film

RESISTORS - (Cont'd)

REF. NO.	PART NO.	OHMS	WATTS	
R201	See Listing Below Schematic Diagram			
R202				
R203				
R204	40X0594-003	350		Contrast Cont. ...
R205	40X0585-048	750K		Vert. Hold Cont. ...
R206	40X0585-063	250K		Brite Cont.
R219	340X3273-841	27K	0.5	Carbon
R220				
R222				
	340X4103-841	10K	1.0	Carbon
	Used w/25A1283-() Tuner Only			
	340X3105-841	1 meg.	0.5	Carbon
	Used w/25A1275-() Tuner Only			
	340X3154-841	150K	0.5	Carbon
	Used w/25A1277-() Tuner Only			
	25A1279-()			
R301	340X3334-841	330K	0.5	Carbon
R349				
R302				
R303	340X3471-841	470	0.5	Carbon
R304				
R305				
R306	340X3564-841	560K	0.5	Carbon
R307	43X0401-036	2K	5.0	Wirewound
R308	340X3103-841	10K	0.5	Carbon
R311	340X3474-841	470K	0.5	Carbon
R312	340X3332-841	3.3K	0.5	Carbon
R313	340X3271-841	270	0.5	Carbon
R314				
R315				
R316A	Part of 9A2698-001			
R316B				
R317				
R318	340X3103-841	10K	0.5	Carbon
R319				
R320				
R321	340X5103-641	10K	2.0	Film
R322	340X3273-841	27K	0.5	Carbon
R323	340X3102-252	1K	0.5	Carbon
R324				
R325				
R326	40X0614-001	6K		Blue Dr. Cont.
R327				
R328				
R329	340X5682-641	6.8K	2.0	Film
R330	340X5563-641	56K	2.0	Film
R331	340X7562-641	5.6K	4.0	Film
R332	340X3104-841	100K	0.5	Carbon
R333				
R334				
R335	40X0590-007	750		41.25 MHz. Trap Cont
R336	340X0133-641	13K	10.0	Film
R337	340X3472-841	4.7K	0.5	Carbon
R338	340X3392-841	3.9K	0.5	Carbon
R339	340X3274-841	270K	0.5	Carbon
R340	340X3331-841	330	0.5	Carbon
R341	340X3221-831	220	5%	0.5 Carbon
R342	340X3102-841	1K	0.5	Carbon
R343				
R344				
R345	40X0590-008	5K		AGC Control
R346	340X3181-831	180	5%	0.5 Carbon
R347	340X3560-831	56	5%	0.5 Carbon
R348	340X4152-841	1.5K	1.0	Carbon
R349	340X6273-641	27K	3.0	Film
R350	340X3154-821	150K	Special	Mtch. Pr. Carbon .
R351				
R352				
R353	340X3470-831	47	5%	0.5 Carbon
R354	340X4271-841	270	1.0	Carbon
R355	340X3394-841	390K	0.5	Carbon
	340X3106-841	10 meg.	0.5	Carbon
	340X3472-831	4.7K	5%	0.5 Carbon
	40X0590-006	10K		47.25 MHz. Trap Cont
	340X3151-841	150	0.5	Carbon

REPLACEMENT PARTS LIST (Cont.)

RESISTORS - (Cont'd)

REF. NO.	PART NO.	OHMS	WATTS	
R356	340X3823-841	82K	0.5	Carbon
R357	340X3270-841	27	0.5	Carbon
R358	340X3224-841	220K	0.5	Carbon
R501	340X4683-841	68K	1.0	Carbon
R518				
R502	340X3106-841	10 meg.	0.5	Carbon
R503	340X3683-831	68K	5% 0.5	Carbon
R504	340X4154-841	150K	1.0	Carbon
R505	340X3333-841	33K	0.5	Carbon
R526				
R533				
R506	340X3683-841	68K	0.5	Carbon
R507	340X4473-841	47K	1.0	Carbon
R508	340X3272-841	2.7K	0.5	Carbon
R509	340X3563-841	56K	0.5	Carbon
R510	340X3154-841	150K	0.5	Carbon
R511	340X3394-841	390K	0.5	Carbon
R512				
R513	340X3824-841	820K	0.5	Carbon
R514	340X3823-841	82K	0.5	Carbon
R515	340X3473-841	47K	0.5	Carbon
R534				
R516	340X3104-841	100K	0.5	Carbon
R517	340X4124-841	120K	1.0	Carbon
R519	340X3562-841	5.6K	0.5	Carbon
R520	340X6821-641	820	3.0	Film
R521	340X3102-841	1K	0.5	Carbon
R522	340X3273-841	27K	0.5	Carbon
R523	340X3275-841	2.7 meg.	0.5	Carbon
R524	340X3274-841	270K	0.5	Carbon
R525	340X3332-841	3.3K	0.5	Carbon
R527	340X3105-841	1 meg.	0.5	Carbon
R528A	40X0614-003	50K		Vert. Lin. Control...
R528B		7.5 meg.		Height Control
R529	340X4105-841	1 meg.	1.0	Carbon
R530	340X3225-841	2.2 meg.	0.5	Carbon
R532	340X4393-831	39K	5% 1.0	Carbon
R701	340X3221-841			
R701	340X3221-842			
R701	340X3221-841	220	0.5	Carbon
R702	340X6153-641	15K	3.0	Film
R703	340X5333-641	33K	2.0	Film
R704	340X4473-841	47K	1.0	Carbon
R761				
R705	340X3561-841	560	0.5	Carbon
R707				
R706	340X3335-841	3.3 meg.	0.5	Carbon
R708	340X8103-641	10K	5.0	Film
R709	340X3102-841	1K	0.5	Carbon
R710	340X5183-641	18K	2.0	Film
R711	340X3474-841	470K	0.5	Carbon
R716				
R720				
R732				
R735	340X3103-831	10K	5% 0.5	Carbon
R743				
R712				
R713				
R718	340X3105-841	1 meg.	0.5	Carbon
R722				
R724				
R744				
R755	340X3224-841	220K	0.5	Carbon
R764				
R714				
R733				
R740	340X3224-841	220K	0.5	Carbon
R746				

RESISTORS - (Cont'd)

REF. NO.	PART NO.	OHMS	WATTS	
R715	340X5273-641	27K	2.0	Film
R725				
R741				
R717	340X3274-841	270K	0.5	Carbon
R719	340X3682-841	6.8K	0.5	Carbon
R721	340X3102-251	1K	0.5	Carbon
R723				
R742	340X3471-841	470	0.5	Carbon
R726				
R739				
R769	340X4131-831	130	5% 1.0	Carbon
R727				
R728	340X3822-831	8.2K	5% 0.5	Carbon
R729	340X5201-641	200	2.0	Film
R730B	40X0614-004	1 meg.		Killer Cont.
R731	340X3683-841	68K	0.5	Carbon
R734	340X3475-831	4.7 meg.	5% 0.5	Carbon
R736	340X3683-621	68K	0.5	Film
R737	340X3225-841	2.2 meg.	0.5	Carbon
R756				
R738	340X3391-841	390	0.5	Carbon
R745	340X3223-841	22K	0.5	Carbon
R771				
R747	340X3335-721	3.3 meg.	2% 0.5	Film
R748	340X3154-621	150K	2% 0.5	Film
R749	340X3155-841	1.5 meg.	0.5	Carbon
R751	340X3104-841	100K	0.5	Carbon
R752	340X3152-831	1.5K	5% 0.5	Carbon
R753	340X4154-831	150K	5% 1.0	Carbon
R754	340X3184-841	180K	0.5	Carbon
R757	340X3124-841	120K	0.5	Carbon
R766				
R758	340X3473-841	47K	0.5	Carbon
R759				
R770	340X3392-841	3.9K	0.5	Carbon
R760				
R774	340X4682-841	6.8K	1.0	Carbon
R762				
R763	340X3823-841	82K	0.5	Carbon
R765A	40X0615-001	1.5 meg.		Red Screen Drv. .
R765B				Green Screen Drv. .
R765C				Blue Screen Drv. .
R772	340X3394-831	390K	5% 0.5	Carbon
R773	340X4393-841	39K	1.0	Carbon
R801	40X0570-007	90	3.0	Wirewound
R802	340X4271-841	270	1.0	Carbon
R803	340X4101-851	100	1.0	Carbon
R806				
R804	40X0570-003	120	1.0	Wirewound
R805				
R813	40X0570-004	60	1.0	Wirewound
R808				
R814				
R815	340X4151-851	150	1.0	Carbon
R809				
R810	340X3470-841	47	0.5	Carbon
R811	40X0570-001	150	1.0	Wirewound
R812	40X0570-006	500	1.0	Wirewound
R816	340X3391-841	390	0.5	Carbon
R901	340X3104-841	100K	0.5	Carbon
R902	40X0619-001	10		Horiz. Center. Cont. .
R903	340X8182-641	1.8K	5.0	Film
R904	340X4221-831	220	5% 1.0	Carbon
R905	340X3102-841	1K	0.5	Carbon
R906	340X3335-841	3.3 meg.	0.5	Carbon
R918				
R907	340X3155-831	1.5 meg.	5% 0.5	Carbon
R908	340X4182-841	1.8K	1.0	Carbon
R909	340X4105-831	1 meg.	5% 1.0	Carbon

REPLACEMENT PARTS LIST (Cont.)

RESISTORS - (Cont'd)

REF. NO.	PART NO.	OHMS	WATTS	
R910	40X0590-011	2.5 meg.		H.V. Adjust Cont
R912	340X3224-841	220K	0.5	Carbon
R913	340X5475-851	4.7 meg.	2.0	Carbon
R914 } R917 }	43X0451-003	30 meg.		H.V. Film
R915	40X0618-001	15 meg.		Focus Control
R916	43X0451-004	40 meg.		H.V. Film
R1401	340X3102-841	1K	0.5	Carbon
R1402	340X3331-841	330	0.5	Carbon
R1403	340X3101-841	100	0.5	Carbon
R1404 } R1408 }	340X3473-841	47K	0.5	Carbon
R1405	340X3223-841	22K	0.5	Carbon
R1406	340X3333-841	33K	0.5	Carbon
R1407	340X3392-841	3.9K	0.5	Carbon

TRANSFORMERS AND COILS

REF. NO.	PART NO.	DESCRIPTION
L101 } L102 }	9A2711-001	Degaussing Coil
L103	52X0114-002	Choke, Filter
L104A } L104B }	9A2695-001	Line Filter
L105	9A2629-002	Pin Phase Coil
L106 } L107 } L108 }	Part of Deflection Yoke Assembly - 9A2707-001	
L109		
L301	9A2699-001	Sound Detector Coil
L302	9A2697-001	Sound Take-Off Coil
L303	9A2553-003	Coil, Choke 12 uh
L304	9A2553-001	Coil, Choke 1.8uh
L305	9A2563-000	47.25 MHz Trap Coil
L306	36A0095-004	Peaking Coil 12uh
L307	9A2432-000	Coil, RF Choke 16uh
L308	9A2565-000	Coil, 4.5 MC Trap
L309	36A0095-011	Peaking Coil 39uh
L310	36A0095-010	Peaking Coil 68uh
L311	36A0095-009	Peaking Coil 330uh
L312	9A2380-000	Filament Choke 1.5uh
L501	9A2708-001	Coil, Horiz. Oscillator
L701	9A2658-003	Coil, Chroma Take-Off
L703 } L704 } L707 }	36A0095-008	Inductor 620uh (Special)
L705	9A2680-003	Choke 3.3uh
L706	9A2710-001	Coil, Osc. Bias
L709	36A0095-013	Choke 33.0uh
L801	9A2555-003	Coil Right R/G Vertical
L802	9A2634-002	Coil Right R/G Horizontal
L803	9A2630-001	Coil - Blue Shaper Horizontal
L804	9A2556-003	Coil Right Blue Horizontal
L805A } L805B } L805C }	Part of 9A2649-002 Convergence Ass'y	
L901 } L902 }	9A2553-004	Choke, 5.6uh
L1401	9A2681-001	Input Coil
L1402	9A2681-002	Discriminator Coil, Primary
L1403	9A2681-003	Discriminator Coil, Secondary
L1404 } L1405 }	9A2553-001	Choke Coil 1.8 uh
T101	53X0445-002	Power Transformer
T102	51X0249-001	Audio Output Transformer
T103	51X0248-001	Vertical Output Transformer
		Less - 5 Female Terminals
	38A4145-000	Vertical Output Transformer
		w/5 Female Terminals
T104	52X0116-003	Pin Transformer

TRANSFORMERS AND COILS - (Cont'd)

REF. NO.	PART NO.	DESCRIPTION
T301	9A2698-001	4.5 MHz Transformer
T302	9A2562-001	1st IF Grid Transformer
T303	9A2562-003	1st Pix IF Transformer
T304	9A2562-002	2nd Pix IF Transformer
T305	9A2667-003	3rd Pix IF Transformer
T306	9A2655-001	Mutual Coupling Transformer
T701	9A2661-003	1st Bandpass Transformer
T702	9A2709-001	2nd Bandpass Transformer
T703	9A2685-002	Burst Amp Transformer
T704	9A2660-002	ECO Transformer
T901	53X0453-001	Horizontal Output Transformer (Includes - R902 - C902 - L901)

TRANSISTORS

REF. NO.	PART NO.	DESCRIPTION
Q301	86X0006-001	AGC Ampl.
Q302	86X0034-001	Video Ampl.
Q501	86X0048-001	Sync. Separator
Q701	86X0045-001	ACC Amp.
Q702	86X0044-001	Color Killer
Q703	86X0047-001	Tint Mod
Q1401	86X0038-001	Auto. Fine Tuning Amp.

MISCELLANEOUS

Ref. No.	Part No.	Description
AC	6A0380-001	Connector Male-P106 (AC Interlock)
	13X0944-003	Line Cord
		(Used on Chassis T511, T512, T513, T514, T523, T524, T531, T532, T533, T534, T561, T562)
	38A4193-000	Plug & Lead Ass'y for Brite, Contrast & Vertical Hold
		(Used on Chassis T521, T522, T571, T572, T581, T582)
	38A4194-000	Plug & Lead Ass'y for Brite, Contrast & Vertical Hold
		(Used on Chassis T521, T522, T523, T524, T571, T572, T581, T582)
	38A4178-000	Cable Ass'y for Volume Control
		(Used on Chassis T521, T522, T523, T524, T571, T572)
	38A4179-000	Cable Ass'y for Tint Control
	38A4180-000	Cable Ass'y for Color Control
Cable Plug & Lead Ass'y.	38A4160-000	Male Cable Assembly for Pilot Light
	38A4161-000	Female Cable Assembly for Pilot Light
	38A4171-000	Cable Assembly for Volume Control
	38A4177-000	Cable Assembly for Color Control
		(Used on Chassis T511, T512, T513, T514, T531, T532, T533, T534)
	38A4176-000	Cable Assembly for Tint Control
		(Used on Chassis T561, T562)
	38A4389-000	Cable Assembly for Tint Control
		(Used on Chassis T581, T582)
	38A4402-000	Tuner Power Plug & Lead Assembly
	38A4350-000	Power Cable & Receptacle Assembly
	38A4352-000	Cable Assembly for Tint Control
	38A4353-000	Cable Assembly for Color Control
	38A4349-000	On-Off, AFT, & Tint Mod. Sw. Assembly
		For all other specific Tint Mod. Sw. & Cable Assemblies see Cabinet Miscellaneous List or Ref. No. S204
		(Used on Chassis T511, T512, T513, T514, T521, T522, T523, T524, T561, T562, T571, T572)
	38A4242-000	Tuner Power Plug & Lead Assembly
CB-101	2A0610-001	Circuit Breaker
Converg	9A2649-002	Coil Ass'y.(Center Converg.)
CR-301	66X0020-000	Sound Det. (1N295)
CR-302	66X0020-000	Crystal CR302 part of (9A2667-003) (3rd Pix IF Trans) (1N295)

MISCELLANEOUS - Continued

REF. NO.	PART NO.	DESCRIPTION
	1X0570-001	Brace for P159.....
	30X0718-001	Contact Pins Male P901-902
	30X0705-001	Mounting Lugs (Used on PC159).....
	10A1188-901	Focus Control Shaft Guide Ass'y
PW-1100	38A4129-000	Prt. Crt. Brd. - Power Supply (P158)
	38A4227-000	Prt. Crt. Brd. - Power Supply w/AC Receptacle. Used on Combination Chassis ONLY
PW-1400	38A4184-000	A.F.T. Ass'y Complete w/Cable (P161)
Receptacles	38A4150-000	6 Terminal Assembly Female
	38A4151-000	9 Terminal Assembly Female
	38A4152-000	15 Terminal Assembly Female
	38A4149-000	Convergence Assembly Female
	38A4153-000	Yoke Assembly Female
RV-101	43X0456-001	Varistor (White Dot or Band)
RV-901	43X0457-004	Varistor (Black & Blue Dot or Bands).....
RV-1101	43X0454-001	Varistor
RT-101	43X0453-001	Thermistor
RT-1101	43X0455-002	Thermistor
		(Used on Chassis Stamped T511, T512, T513, T514, T561, T562)
	41X0128-004	Pilot Light
		(Used on Chassis Stamped T521, T522, T523, T524, T531, T532, T533, T534, T571, T572, T581, T582)
	41X0129-001	Pilot Light
Shields	20X1907-001	Retaining Clip, Pilot Light
	32X0467-000	6JH6-6GM6 Tube
	32X0468-000	6GH8A Tube (V-701).....
	32X0469-000	6GH8A Tube (V-703).....
	32X0484-001	ECO & Band Pass Coil
	32X0485-001	I-F Input
	32X0501-001	Bottom (PW300) Pix I-F & Sound Board ...
S-101	2A0595-001	Vacation Slide Switch.....
		(Used on Chassis T511, T512, T513, T514, T531, T532, T533, T534)
	2A0628-001	On-Off Switch (AC)
		(Used on Chassis T561, T562)
S-201	38A4386-000	On-Off Switch & Cap Ass'y.....
		(On Chassis T521, T522, T523, T524, T571, T572, T581, T582 - Switch - Part of Volume Control - See Listing Below Schematic Diagram)
S-202A	2A0624-001	Wafer Switch (on Tuner back).....
S-202B		(Used on Chassis T511, T512, T513, T514, T561, T562)
	*38A4159-000	Ass'y. AFT Sw. & Gear 30 Teeth Gear (earlier models)...
	*38A4431-000	Ass'y. AFT Sw. & Gear 14 Teeth Gear (later models).....
S-203		(Used on Chassis T521, T522, T523, T524, T571, T572)
	2A0611-001	AFT Switch
		(Used on Chassis T531, T532, T533, T534)
	2A0629-001	AFT Switch
	25X2730-001	Cover, AFT.....
		(Used on Chassis T581, T582)
	2A0635-001	Tint Mod. Switch (Part of AFT Sw.).....
		(Used on Chassis T571, T572)
S-204		(Part of 78X0057-010 - Color Control)
		For all other specific Tint Mod. Sw. & Cable Ass'y. see Cabinet Miscellaneous List or Listing Below Schematic Diagram)
S-301	2A0630-001	Slide Switch (Service)
	37X0360-001	Lever Arm
	303X1215-216	Ph. Head Screw
	20X1950-001	Fastener, Push Nut
	20X1877-003	Keps Nut
SD-301	66X0023-001	Silicon Diode (Fairchild FD222) ..
SD-701, 702	66X0038-001	Silicon Diode (SD701-02)
SD-1101, 1102	66X0023-003	Silicon Rectifier (GE-IN506)
1103, 1104		(GI-IN4385)
SE-901	66X0036-001	Rectifier Boosted Boost (Special)

REPLACEMENT PARTS LIST (Cont'd)

MISCELLANEOUS - Continued

REF. NO.	PART NO.	DESCRIPTION
SG-301, 302 303		Part of Copper Foil on PW300 Board
SG-701, 702 703, 704 705, 706		Part of Copper Foil on PW700 Board
SG-901	28X0764-001	Spring
	30X0710-001	Female (Used as Grounding Pts. All PC Boards)
Terminals	30X0715-001	Female (Used as Receptacle for Circuit Connections on all PC Boards)
Test Points & Connectors	6A0381-001	PC Board Male Plug for Wire Wrap
	30X0701-002	Pin Test Point (TP) & P1101
	30X0703-002	Pin Bead Chain J-307,308,309.
	3A0543-002	12BY7A-6GH8A
	3A0543-003	6JC6-6GH8A
	3A0548-002	6JH6-6GM6
Tube Sockets	3A0548-001	6HZ6-6EW6
	3A0559-002	6AQ5A
	3A0560-005	6GH8A
	3A0593-001	6MF8
	3A0598-001	6KG6A-6EC4A
		(Used on Chassis T511, T512, T513, T514, T561, T562)
	7A0317-001	VHF Pilot Light (PL-201)
	7A0317-002	UHF Pilot Light (PL-202)
Sockets		(Used on Chassis T521, T522, T523, T524, T571, T572, T581, T582)
	7A0337-001	VHF Pilot Light (PL-201)
	7A0338-001	UHF Pilot Light (PL-202)
		(Used on Chassis T531, T532, T533, T534)
	7A0345-001	VHF Pilot Light (PL-201)
	7A0345-002	UHF Pilot Light (PL-202)

MISCELLANEOUS - Continued

REF. NO.	PART NO.	DESCRIPTION
	25A1282-001	VHF } Used w/Chassis T511, T513,
	25A1275-002	UHF } T561
	25A1283-001	VHF } Used w/Chassis T512, T514,
	25A1277-002	UHF } T562
	25A1282-002	VHF } Used w/Chassis T521, T523,
Tuners	25A1275-001	UHF } T571, T581
	25A1283-002	VHF } Used w/Chassis T522, T524,
	25A1277-001	UHF } T572, T582
	25A1282-003	VHF } Used w/Chassis T531, T533
	25A1275-003	UHF }
	25A1283-003	VHF } Used w/Chassis T532, T534
	25A1277-003	UHF }
		(Used on Chassis T511, T512, T513, T514, T561, T562)
Tuner Misc.	38A3996-000	Fine Tuning Gear Assembly
		(Used on Chassis T511, T512, T513, T514, T561, T562)
	38A4157-000	Tuner Bracket & Gear Assembly
VM-101	38A4148-001	High Voltage Tripler & Lead Ass'y
W-101	13X1003-007	Shielded Lead Ass'y. (Color Control)
W-102	13X1011-004	Shielded Lead Ass'y. (Tint Control)
W-103	13X1156-001	High Voltage Lead & Receptacle Ass'y. (Tripler to Horiz. Output Trans.)
W-104	13X1155-001	High Voltage Lead & Receptacle Ass'y. (Tripler to Focus Panel)
		(Used on Chassis T512, T514, T522, T524, T532, T534, T562, T572, T582)
W-201	38A4268-000	Shielded Cable Assembly
W-301	13X1150-001	Input I-F Cable Assembly
	30X0720-001	I-F Cable Retainer Clip
W-1401	38A4139-000	Shielded Cable & Socket Ass'y. (AFT)
Y-701	68X0004-002	3.58 MHz. Crystal

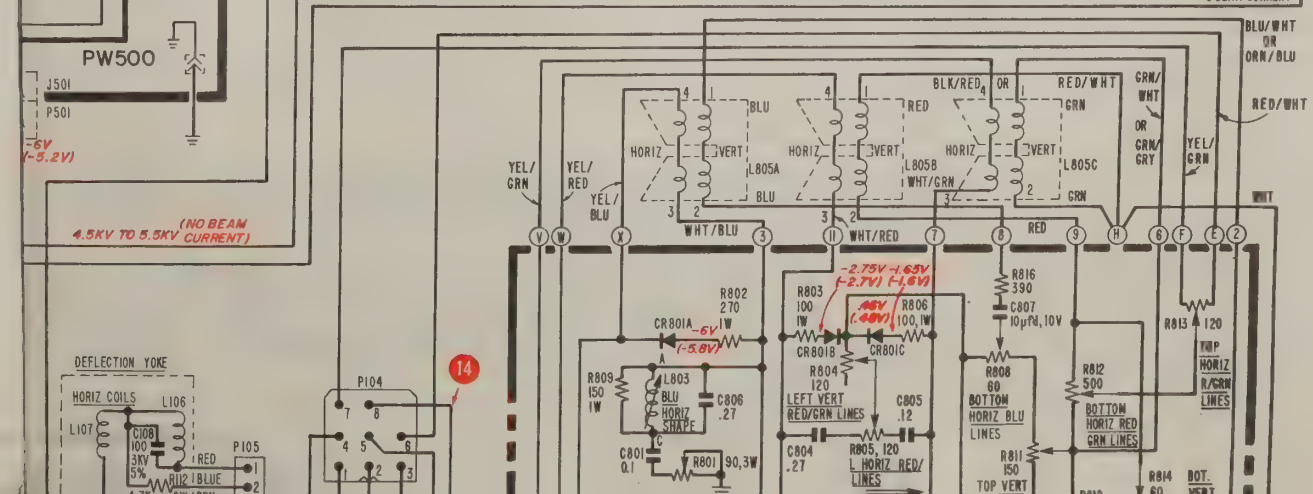
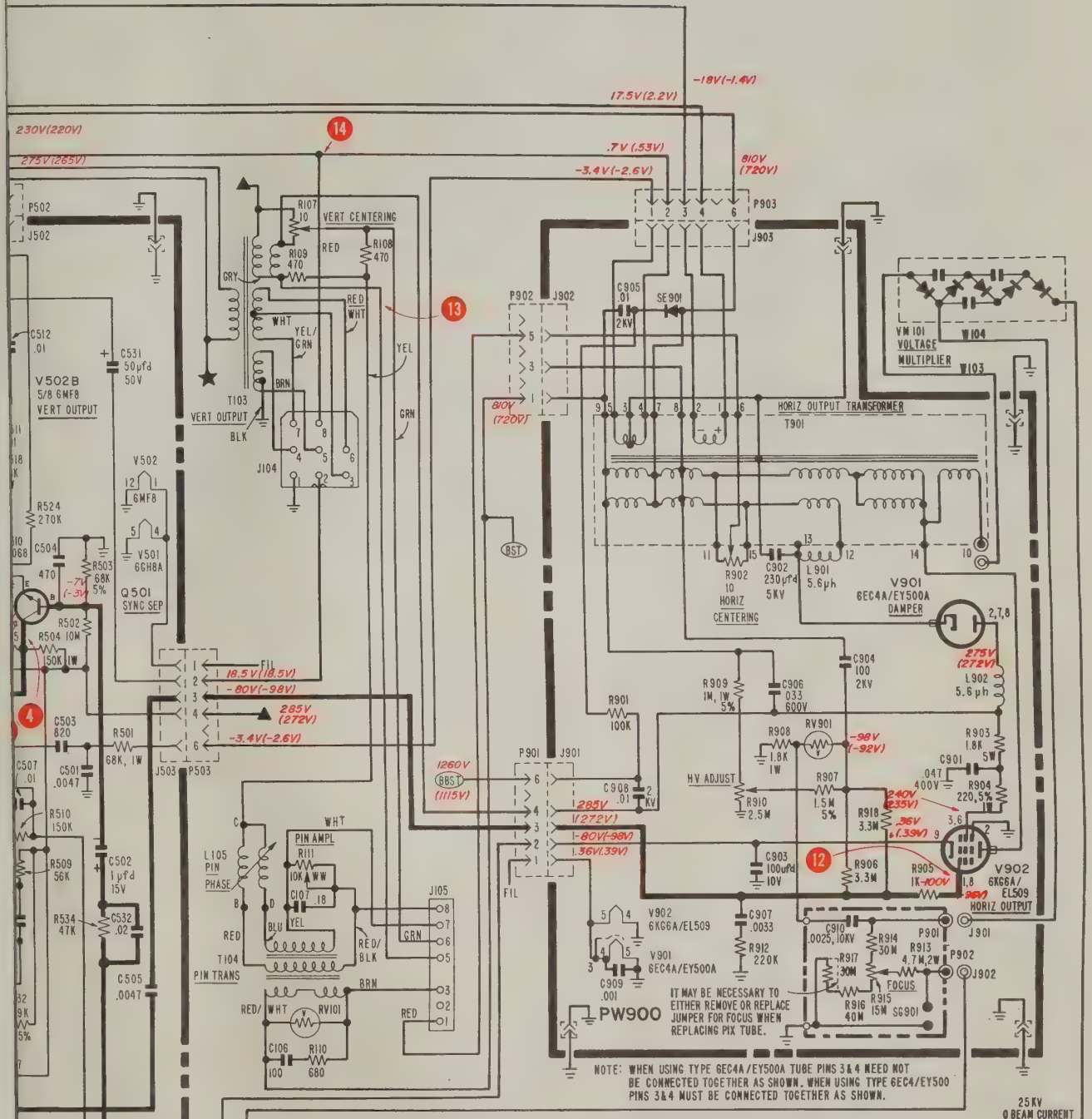
Various Terminals Used on Molex Male or Female Plugs or Connectors

Terminal Male	30X0706-001	Used W/Shielded Cable & Soc. Ass'y. (AFT)	Terminal Male	30X0708-001	Used W/Color Control Cable Ass'y.
		Used W/Volume Control Cable Ass'y.		Cont'd.	Used W/Tuner Cable VHF
		Used W/Pilot Light Cable Ass'y. Ass'y.			Used W/Convergence Cable Ass'y.
		Used W/I-F Input Cable			Used W/Deflection Yoke
		Used W/Shielded Cable & Soc. Ass'y. (AFT)			Used W/6 Terminal Receptacle Ass'y.
Terminal Female	30X0707-001	Used W/5½" H.V. Lead & Receptacle Ass'y.			Used W/9 Terminal Receptacle Ass'y.
		Used W/Volume Control Cable Ass'y.			Used W/15 Terminal Receptacle Ass'y.
		Used W/Pilot Light Cable Ass'y. Ass'y.	Terminal Female	30X0709-001	Used W/Convergence Receptacle Ass'y.
		Used W/Convergence Cable Ass'y.			Used W/Yoke Receptacle Ass'y. Ass'y.
		Used W/Secondary Control Plug & Lead Ass'y.			Used W/10½" H.V. Lead & Receptacle Ass'y.
Terminal Male	30X0708-001	Used W/Auxiliary Control & Plug Ass'y.			Used W/Vert. Output Trans- former Ass'y.
		Used W/Tint Control Cable Ass'y.			

Used on Molex Male or Female Plugs or Connectors Pin Extracting Tools

W.G. PART NO.	MFG. PART NO.	DESCRIPTION	W.G. PART NO.	MFG. PART NO.	DESCRIPTION
67X0036-001	#HT2285	Tool (Used for Extracting 30X0708-001 & 30X0709-001 Terminals from Plastic Housing).	67X0037-001	#HT2038	Tool (Used for Extracting 30X0706-001 & 30X0707-001 Terminals from Plastic Housing).

NOTE: The above tool may be obtained from Wells-Gardner.



REPLACEMENT PARTS LIST (Cont'd)

MISCELLANEOUS - Continued

REF. NO.	PART NO.	DESCRIPTION
SG-301, 302 303		Part of Copper Foil on PW300 Board
SG-701, 702 703, 704 705, 706		Part of Copper Foil on PW700 Board
SG-901	28X0764-001	Spring
	30X0710-001	Female (Used as Grounding Pts. All PC Boards)
Terminals	30X0715-001	Female (Used as Receptacle for Circuit Connections on all PC Boards)
Test Points & Connectors	6A0381-001	PC Board Male Plug for Wire Wrap
	30X0701-002	Pin Test Point (TP) & P1101
	30X0703-002	Pin Bead Chain J-307,308,309 .
	3A0543-002	12BY7A-6GH8A
	3A0543-003	6JC6-6GH8A
	3A0548-002	6JH6-6GM6
Tube Sockets	3A0548-001	6HZ6-6EW6
	3A0559-002	6AQ5A
	3A0560-005	6GH8A
	3A0593-001	6MF8
	3A0598-001	6KG6A-6EC4A
		(Used on Chassis T511, T512, T513, T514, T561, T562)
	7A0317-001	VHF Pilot Light (PL-201)
	7A0317-002	UHF Pilot Light (PL-202)
Sockets		(Used on Chassis T521, T522, T523, T524, T571, T572, T581, T582)
	7A0337-001	VHF Pilot Light (PL-201)
	7A0338-001	UHF Pilot Light (PL-202)
		(Used on Chassis T531, T532, T533, T534)
	7A0345-001	VHF Pilot Light (PL-201)
	7A0345-002	UHF Pilot Light (PL-202)

MISCELLANEOUS - Continued

REF. NO.	PART NO.	DESCRIPTION
	25A1282-001	VHF } Used w/Chassis T511, T513,
	25A1275-002	UHF } T561
	25A1283-001	VHF } Used w/Chassis T512, T514,
	25A1277-002	UHF } T562
	25A1282-002	VHF } Used w/Chassis T521, T523,
Tuners	25A1275-001	UHF } T571, T581
	25A1283-002	VHF } Used w/Chassis T522, T524,
	25A1277-001	UHF } T572, T582
	25A1282-003	VHF } Used w/Chassis T531, T533
	25A1275-003	UHF }
	25A1283-003	VHF } Used w/Chassis T532, T534
	25A1277-003	UHF }
		(Used on Chassis T511, T512, T513, T514, T561, T562)
Tuner Misc.	38A3996-000	Fine Tuning Gear Assembly
		(Used on Chassis T511, T512, T513, T514, T561, T562)
	38A4157-000	Tuner Bracket & Gear Assembly
VM-101	38A4148-001	High Voltage Tripler & Lead Ass'y
W-101	13X1003-007	Shielded Lead Ass'y. (Color Control)
W-102	13X1011-004	Shielded Lead Ass'y. (Tint Control)
W-103	13X1156-001	High Voltage Lead & Receptacle Ass'y. (Tripler to Horiz. Output Trans.)
W-104	13X1155-001	High Voltage Lead & Receptacle Ass'y. (Tripler to Focus Panel)
		(Used on Chassis T512, T514, T522, T524, T532, T534, T562, T572, T582)
W-201	38A4268-000	Shielded Cable Assembly
W-301	13X1150-001	Input I-F Cable Assembly
	30X0720-001	I-F Cable Retainer Clip
W-1401	38A4139-000	Shielded Cable & Socket Ass'y. (AFT)
Y-701	68X0004-002	3.58 MHz. Crystal

Various Terminals Used on Molex Male or Female Plugs or Connectors

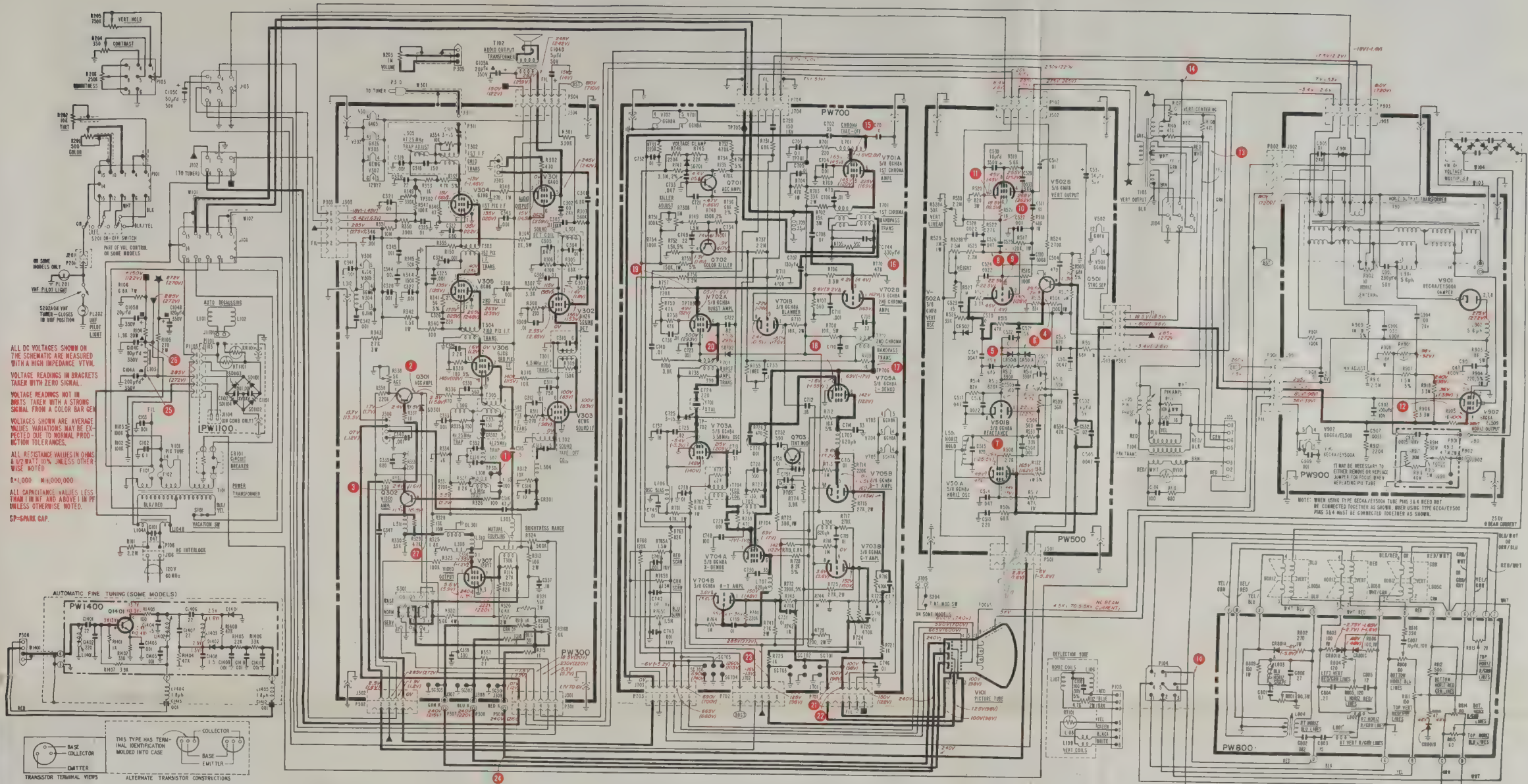
Terminal Male	30X0706-001	Used W/Shielded Cable & Soc. Ass'y. (AFT)	Terminal Male	30X0708-001	Used W/Color Control Cable Ass'y.
		Used W/Volume Control Cable Ass'y.		Cont'd.	Used W/Tuner Cable VHF
		Used W/Pilot Light Cable Ass'y. Ass'y.			Used W/Convergence Cable Ass'y.
		Used W/I-F Input Cable			Used W/Deflection Yoke
		Used W/Shielded Cable & Soc. Ass'y. (AFT)			Used W/6 Terminal Receptacle Ass'y.
Terminal Female	30X0707-001	Used W/5½" H.V. Lead & Receptacle Ass'y.			Used W/9 Terminal Receptacle Ass'y.
		Used W/Volume Control Cable Ass'y.			Used W/15 Terminal Receptacle Ass'y.
		Used W/Pilot Light Cable Ass'y. Ass'y.	Terminal Female	30X0709-001	Used W/Convergence Receptacle Ass'y.
		Used W/Convergence Cable Ass'y.			Used W/Yoke Receptacle Ass'y. Ass'y.
		Used W/Secondary Control Plug & Lead Ass'y.			Used W/10½" H.V. Lead & Receptacle Ass'y.
Terminal Male	30X0708-001	Used W/Auxiliary Control & Plug Ass'y.			Used W/Vert. Output Trans- former Ass'y.
		Used W/Tint Control Cable Ass'y.			

Used on Molex Male or Female Plugs or Connectors Pin Extracting Tools

W.G. PART NO.	MFG. PART NO.	DESCRIPTION	W.G. PART NO.	MFG. PART NO.	DESCRIPTION
67X0036-001	#HT2285	Tool (Used for Extracting 30X0708-001 & 30X0709-001 Terminals from Plastic Housing).	67X0037-001	#HT2038	Tool (Used for Extracting 30X0706-001 & 30X0707-001 Terminals from Plastic Housing).

NOTE: The above tool may be obtained from Wells-Gardner.

T5001 SERIES SCHEMATIC



T5001-5216C

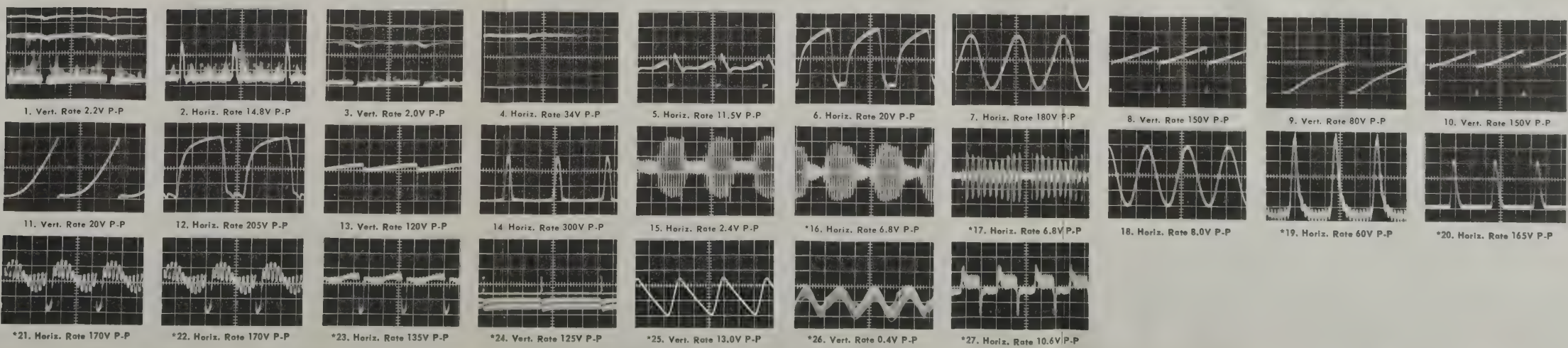
- R201 Used on Models T511-T512-T531-T532
40X0616-002 500 Color Control, Slide
40X0620-002 500 Color Control, Slide
- R202 Used on Models T511-T512-T531-T532
40X0616-001 10K Tint Control, Slide
Used on Models T513-T514-T533-T534-T581-T582-T561-T562
40X0620-001 10K Tint Control, Slide
- R201 Used on Models T521-T522-T523-T524
78X0057-007 10K Tint Control
R202 500 Chroma Control

- R201 Used on Models T571-T572
78X0057-010 10K Tint/Tint Mod Control
S204 500 Chroma Control
- R203 Used on Models T511-T512-T531-T532
40X0616-003 1meg. Volume Control, Slide
Used on Models T513-T514-T533-T534-T561-T562
40X0620-003 1meg. Volume Control, Slide
- R203 Used on Models T521-T522-T523-T524-T571-T572
78X0064-001 1meg. Volume Control
S201 Switch, On-Off
Used on Models T581-T582
78X0064-003 1meg. Switch, On-Off

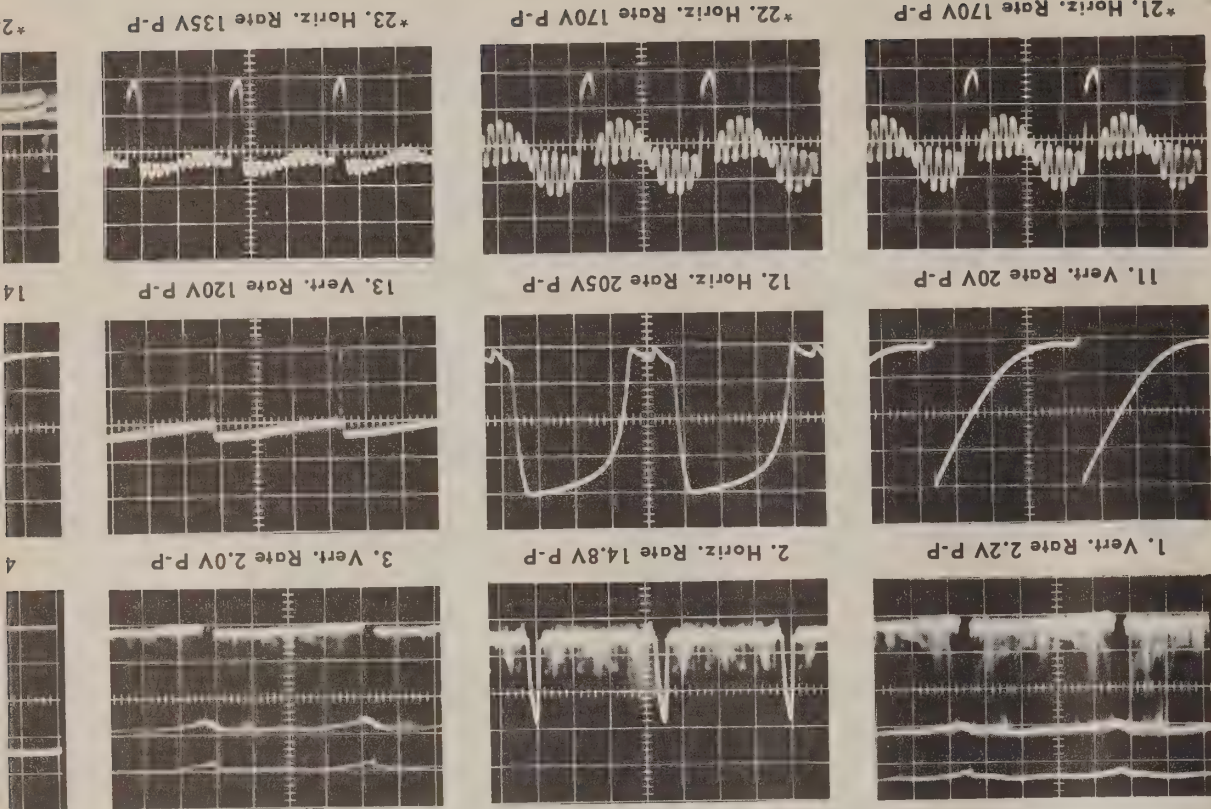
- S201 Used on Models T511-T512-T513-T514-T531-T532-T533-T534
2A0628-001 Switch-On-Off
Used on Models T561-T562
38A4386-000 On-Off Switch & Cap Ass'y
- S203 Used on Models T511-T512-T513-T514-T561-T562
38A4159-000 AFT Switch & Gear Ass'y
Used on Models T521-T522-T523-T524-T571-T572
2A0611-001 AFT Switch
Used on Models T531-T532-T533-T534
2A0629-001 AFT Switch
- S203 Used on Models T581-T582
S204 2A0635-001 AFT-Tint Mod Switch

- PIL01 Used on Models T511-T512-T513-T514-T561-T562
7A0317-001 VHF Pilot Light (PL201)
- PIL02 Used on Models T521-T522-T523-T524
7A0317-002 UHF Pilot Light (PL202)
- PIL03 Used on Models T531-T532-T533-T534
7A0337-001 VHF Pilot Light (PL201)
- PIL04 Used on Models T571-T572-T581-T582
7A0338-001 UHF Pilot Light (PL202)
- PIL05 Used on Models T581-T582-T591-T592
7A0345-001 VHF Pilot Light (PL201)
- PIL06 Used on Models T591-T592-T601-T602
7A0345-002 UHF Pilot Light (PL202)

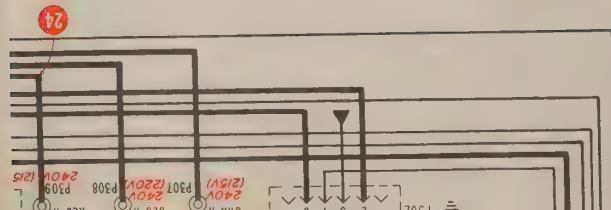
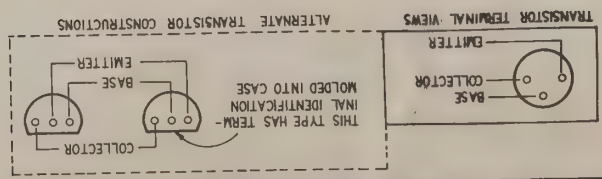
CHASSIS VOLTAGE WAVEFORMS



NOTE: VOLTAGE WAVEFORMS TAKEN WITH A WIDEBAND OSCILLOSCOPE USING A LOW CAPACITANCE PROBE. ALL WAVEFORMS TAKEN USING A STRONG TEST PATTERN SIGNAL EXCEPT THOSE MARKED WITH AN () TAKEN WITH A COLOR BAR GENERATOR.



R201	}	Used on Models T511-T512-T531-T532	40X0616-002	500	Color Control, Slide
		Used on Models T513-T514-T533-T534-T581-T582-T561-T562	40X0620-002	500	Color Control, Slide
R202	}	Used on Models T511-T512-T531-T532	40X0616-001	10K	Tint Control, Slide
		Used on Models T513-T514-T533-T534-T581-T582-T561-T562	40X0620-001	10K	Tint Control, Slide
R201	}	Used on Models T521-T522-T523-T524	78X0057-007	10K	Tint Control
		Used on Models T521-T522-T523-T524	78X0057-007	10K	Tint Control
R202	}	Used on Models T521-T522-T523-T524	78X0057-007	10K	Tint Control
		Used on Models T521-T522-T523-T524	78X0057-007	10K	Tint Control
R201	}	Used on Models T521-T522-T523-T524	78X0057-007	10K	Tint Control
		Used on Models T521-T522-T523-T524	78X0057-007	10K	Tint Control



CABINET MISCELLANEOUS

Used on Models 6119A, 6106A, 6107A, 6111A, 6121A,
6122A, 6123A, 6124A

PART NO.	DESCRIPTION
38A4398-000	Control Panel Escutcheon Assembly
38A4208-010	Dial Assembly UHF
38A4208-009	Knob Assembly VHF
38A4208-011	Knob Assembly, UHF Tuning.
38A3000-246	Knob Assembly, Fine Tuning.
10A1183-903	Knob Assembly, Bright., Vert., Cont.
10A1169-011	Knob, On-Off Volume, AFT, Auto Tint
10A1187-019	Knob, Slide Color
10A1187-020	Knob, Slide Tint
4X2154-015	Insert, Secondary Control Ind. Strip(B.V.C.)—
50A2020-211	Antenna Block Twin Lead Assembly

Used on Models 6106A, 6107A, 6111A, 6121A, 6122A,
6123A, 6124A

4X2220-018	Pix Mask
------------	--------------------

Used on Model 6119A

25VBAP22	25" V Color Bonded Pix Tube
4X2220-014	Pix Mask
14X0948-004	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover
N01B614B-030	Leg, Cabinet
25X2797-001	Leg Mounting Bracket
79X0163-002	Plastic Foot

Used on Models 6111A, 6121A, 6122A, 6123A, 6124A

25VACP22	25" V Color Banded Kimcode Pix Tube. . .
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Used on Models 6106A, 6107A

25VAUP22	25" V Color Bonded Pix Tube
----------	---------------------------------------

Used on Models 6119A, 6106A, 6107A, 6111A

12A0654-001	4" x 6" PM Speaker
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Used on Models 6121A, 6122A, 6123A, 6124A

12A0657-001	4" x 6" PM Speaker
#61-3418	Strike
#61-3308	Magnetic Catch (Used w/Strike).
#1595	Hinge (Door)
305X0411-308	Screw (Used w/Hinge)

PART NO. DESCRIPTION

Used on Models 6121A, 6122A, 6123A

14X0948-008	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover

Used on Models 6107A, 6111A

14X0957-002	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover

Used on Model 6106A

14X0948-007	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover

Used on Model 6124A

14X0948-009	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover

Used on Models 6107A, 6111A, 6122A, 6123A, 6124A

#3820A-19U0-	Caster
#E-2011	Caster Bracket

Used on Model 6107A

#5-2233/DC1640	Decorative Pull
#K10728	Stud } Used w/Pull.
#K10729	Clip }

Used on Model 6121A

#DC 19688	Decorative Pull
-----------	---------------------------

Used on Model 6122A

#B6383	Decorative Pull (Mounted on Door)
#K13241 }	Decorative Pull (Mounted on Cabinet Base)
#K13242 }	
#K10728	Stud } Used w/Pull (Cabinet Base). .
#K10729	Clip }

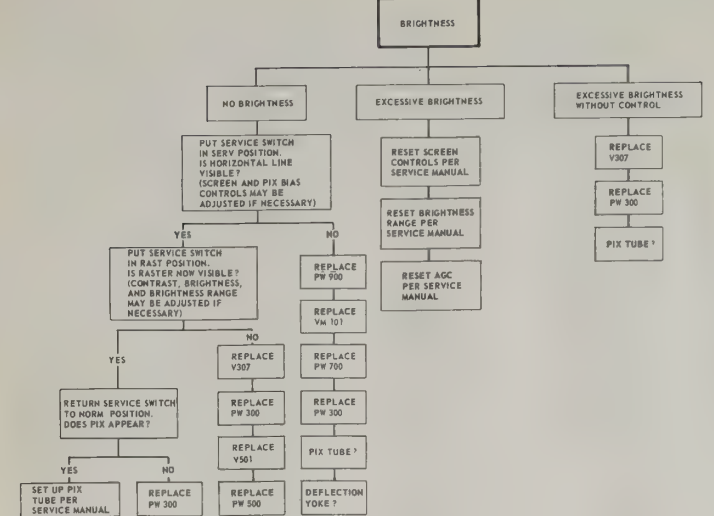
Used on Model 6123A

#N2140	Decorative Pull (Mounted on Door)
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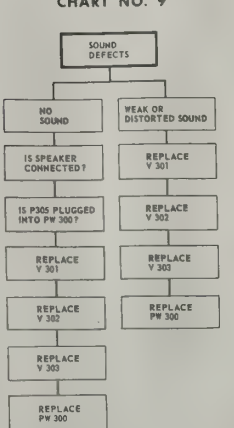
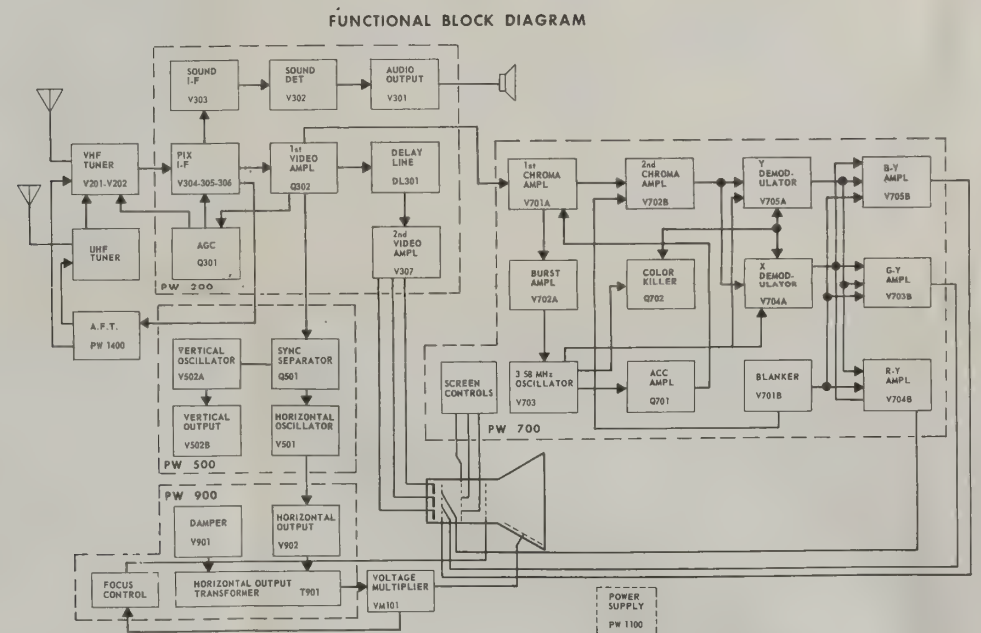
Used on Model 6124A

#DC 10426	Decorative Pull (Mounted on Door)
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CHART NO. 4



As you become more familiar with this chassis, using the Functional Block Diagram and Schematic Diagram, other avenues of systematic troubleshooting will be developed by you to give your customer a better service job.



CABINET MISCELLANEOUS

Used on Models 6119A, 6106A, 6107A, 6111A, 6121A,
6122A, 6123A, 6124A

PART NO.	DESCRIPTION
38A4398-000	Control Panel Escutcheon Assembly
38A4208-010	Dial Assembly UHF
38A4208-009	Knob Assembly VHF
38A4208-011	Knob Assembly, UHF Tuning.
38A3000-246	Knob Assembly, Fine Tuning.
10A1183-903	Knob Assembly, Bright., Vert., Cont.
10A1169-011	Knob, On-Off Volume, AFT, Auto Tint
10A1187-019	Knob, Slide Color
10A1187-020	Knob, Slide Tint
4X2154-015	Insert, Secondary Control Ind. Strip(B.V.C.)—
50A2020-211	Antenna Block Twin Lead Assembly

Used on Models 6106A, 6107A, 6111A, 6121A, 6122A,
6123A, 6124A

4X2220-018	Pix Mask
------------	--------------------

Used on Model 6119A

25VBAP22	25" V Color Bonded Pix Tube
4X2220-014	Pix Mask
14X0948-004	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover
N01B614B-030	Leg, Cabinet
25X2797-001	Leg Mounting Bracket
79X0163-002	Plastic Foot

Used on Models 6111A, 6121A, 6122A, 6123A, 6124A

25VACP22	25" V Color Banded Kimcode Pix Tube.
----------	--

Used on Models 6106A, 6107A

25VAUP22	25" V Color Bonded Pix Tube
----------	---------------------------------------

Used on Models 6119A, 6106A, 6107A, 6111A

12A0654-001	4" x 6" PM Speaker
-------------	------------------------------

Used on Models 6121A, 6122A, 6123A, 6124A

12A0657-001	4" x 6" PM Speaker
#61-3418	Strike
#61-3308	Magnetic Catch (Used w/Strike).
#1595	Hinge (Door)
305X0411-308	Screw (Used w/Hinge)

PART NO. DESCRIPTION

Used on Models 6121A, 6122A, 6123A

14X0948-008	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover

Used on Models 6107A, 6111A

14X0957-002	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover

Used on Model 6106A

14X0948-007	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover

Used on Model 6124A

14X0948-009	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover

Used on Models 6107A, 6111A, 6122A, 6123A, 6124A

#3820A-19U0-	Caster
#E-2011	Caster Bracket

Used on Model 6107A

#5-2233/DC1640	Decorative Pull
#K10728	Stud } Used w/Pull.
#K10729	Clip }

Used on Model 6121A

#DC 19688	Decorative Pull
-----------	---------------------------

Used on Model 6122A

#B6383	Decorative Pull (Mounted on Door)
#K13241 }	Decorative Pull (Mounted on Cabinet Base)
#K13242 }	
#K10728	Stud } Used w/Pull (Cabinet Base).
#K10729	Clip }

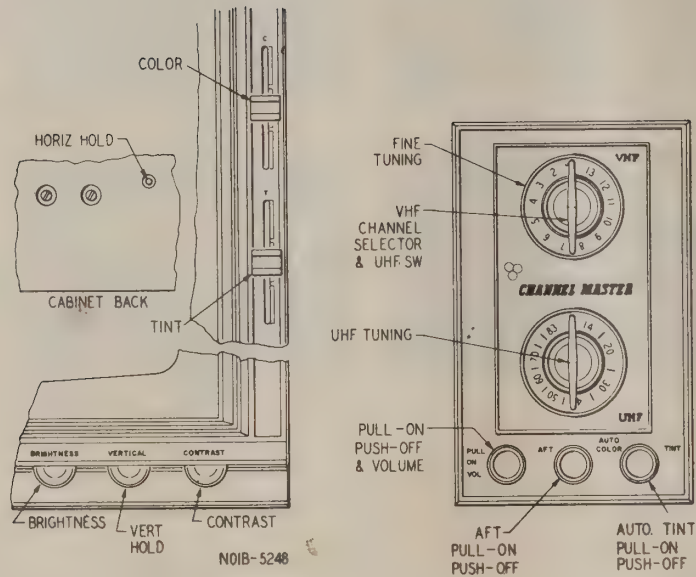
Used on Model 6123A

#N2140	Decorative Pull (Mounted on Door)
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Used on Model 6124A

#DC 10426	Decorative Pull (Mounted on Door)
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CONTROL PANEL



SERVICE DEPARTMENT **CHANNEL MASTER**

Division of AVNET, Inc.

ELLENVILLE N.Y. 12428

CHANNEL MASTER

MANUAL NO.
8660

25" COLOR TELEVISION MODELS

MODEL 6106

MODEL 6121

MODEL 6107

MODEL 6122

MODEL 6111

MODEL 6123

MODEL 6119

MODEL 6124

SERVICING PRECAUTIONS

WARNING: Operation of these receivers outside the cabinet or with the back removed, involves a shock hazard from the receiver power supplies. Work on the receivers should not be attempted by anyone who is not thoroughly familiar with precautions necessary when working on high voltage equipment.

CAUTION: Do not install, remove, or handle the picture tube in any manner unless shatter-proof goggles are worn. People not so equipped should be kept away while handling picture tubes. Keep picture tube away from the body while handling.

To avoid possible exposure to X-radiation and electrical shock hazard, all barriers and metal shields must be in place whenever the chassis is operating.

Using an accurate and reliable voltmeter the high voltage should be adjusted to 25,000 Volts at 120 VAC line voltage and brightness control fully counterclockwise (No Raster) for these chassis-NO HIGHER- in accordance with the Service Manual. Operation at a higher voltage may cause a failure of picture tube or the high voltage supply, and also under certain circumstances produce X-radiation in excess of design levels.

Every time a chassis is serviced, the brightness should be run up and down with a meter on the high voltage to be certain the high voltage does not exceed rated voltage.

IMPORTANT **INSTRUCTIONS FOR USE OF VARIOUS NUMBER BOARDS**

Each board is identified by "P" number indicated on the board. "38A" part number is also listed here for identification with the Service Manual Parts List.

- P169 (38A4293-000) chroma board with "Tint Modifier" can be used for P155 (38A4126-000). Leave tint cable pins unconnected (P705).
- P155 (38A4126-000) chroma board cannot be used for P169 if T.V. model uses tint control switch.
- P177 (38A4342-000) deflection board may be used with either P176 (38A4341-000) or P154 (38A4124-000) pix sound board.

- P176 (38A4341-000) pix sound board must be used P177 (38A4342-000) deflection board.
- P176 (38A4341-000) pix sound board may be used with P156 (38A4127-000) deflection board with following change on P176: C321 - change from .01 MFD to .22 MFD - 100 volt rating or higher.

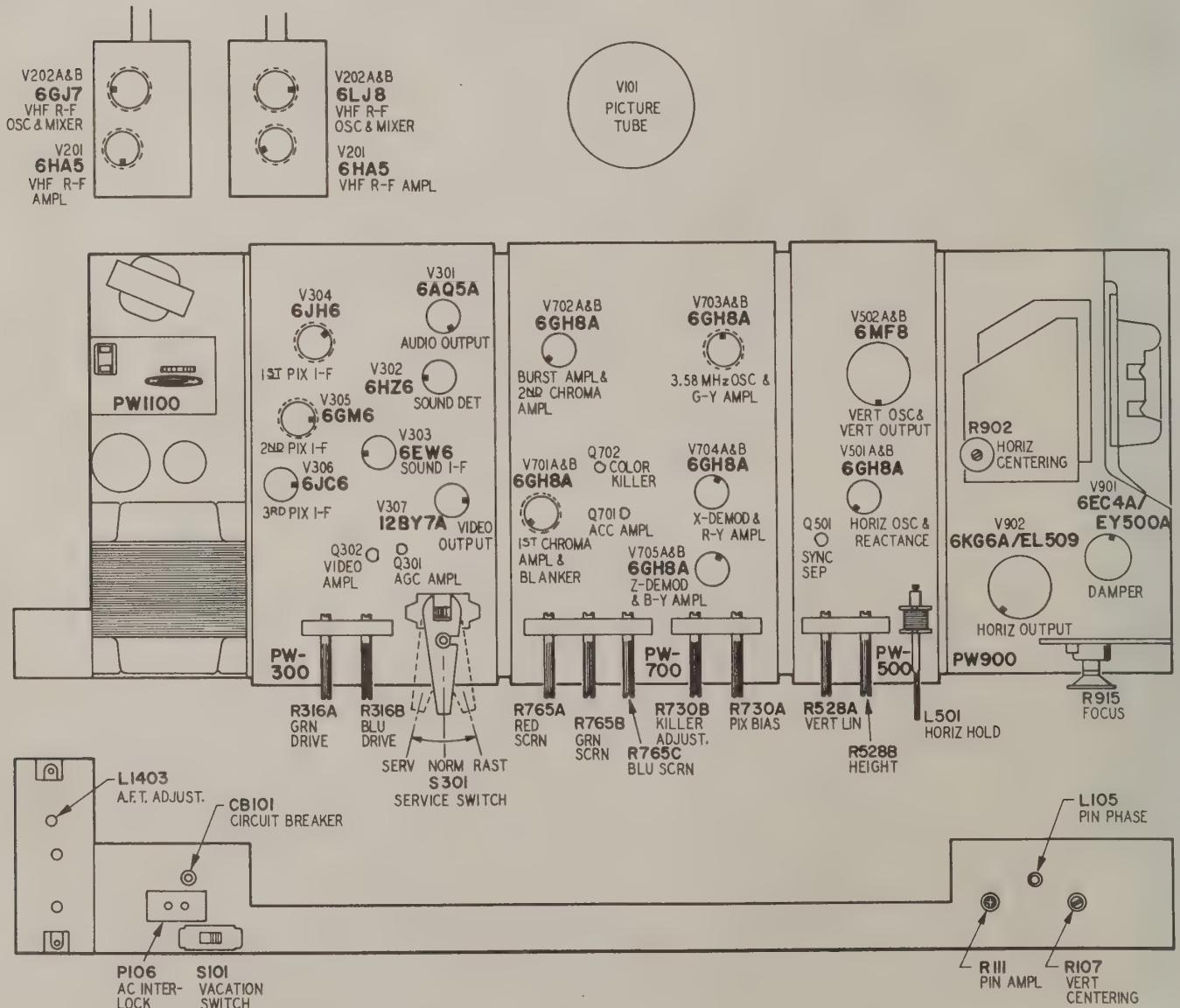


Figure 1 - Tube Layout & Rear Chassis Adjustments

T50-5133A

NOTICE

All Models use Chassis T5001 Series (Stamped on Chassis Rear Apron). Various Model Make-ups (such as T511, T523, T542, etc.) are different only in the Tuners, User Controls, Switches and associated components. This identification is stamped on the Tuner Mounting Bracket. These parts, all of which are reference numbers 200 Series (R201-C204, etc.) Schematic identification are listed below Schematic Diagram.

The Replacement Parts List in this manual indicates parts which are common to all chassis and also parts which are applicable to each chassis. When ordering replacement parts from the manual be sure to check the stamping located on Tuner Mounting Bracket for the correct chassis designation.

TUBE & TRANSISTOR COMPLEMENT

V-101	See Note.	Picture Tube
V-301	6AQ5A	Audio Output
V-302	6HZ6	Sound Det.
V-303	6EW6	Sound I-F
V-304	6JH6	1st Pix I-F
V-305	6GM6	2nd Pix I-F
V-306	6JC6	3rd Pix I-F
V-307	12BY7A	Video Output
V-501 A & B	6GH8A	Horiz. Osc. and Reactance
V-502 A & B	6MF8	Vert. Osc. and Vert. Output
V-701 A & B	6GH8A	1st Chroma Amp. and Blanker
V-702 A & B	6GH8A	Burst Amp. and 2nd Chroma Amp
V-703 A & B	6GH8A	3.58 MHz Osc. and G-Y Amp.
V-704 A & B	6GH8A	X-Demodulator and R-Y Amp.
V-705 A & B	6GH8A	Z-Demodulator and B-Y Amp.
V-901	6EC4A/EY500	Damper
V-902	6KG6A/EL509	Horiz. Output

TRANSISTORS

Q-301	86X0006-001 (SE1002)	AGC Amp.
Q-302	86X0034-001 (Special)	Video Amp.
Q-501	86X0035-001 (Special)	Sync. Sep.
Q-701	86X0045-001 (Special)	ACC Amp.
Q-702	86X0044-001 (2N5087)	Color Killer
Q-1401	86X0038-001 SE5025)	Auto. Fine Tuning Amp.

ELECTRICAL SPECIFICATIONS TV

ANTENNA INPUT IMPEDANCE. . .	300 ohms balanced
AUDIO POWER OUTPUT RATING . . .	1.5 watts max.
INTERMEDIATE FREQUENCIES	
Picture I-F Carrier Frequency.	45.75 mc.
Sound I-F Carrier Frequency	41.25 mc.
Color Sub-Carrier Frequency (Nominal)	42.17 mc.
PICTURE SIZE . . . 23" Pix Tube	Approx. 295 sq. in.
PICTURE SIZE . . . 25" Pix Tube	Approx. 315 sq. in.
POWER INPUT.	120 volts AC, 60 Hz
POWER RATING	.315 watts (TV)
SPEAKER SIZE AND TYPE	See Parts List

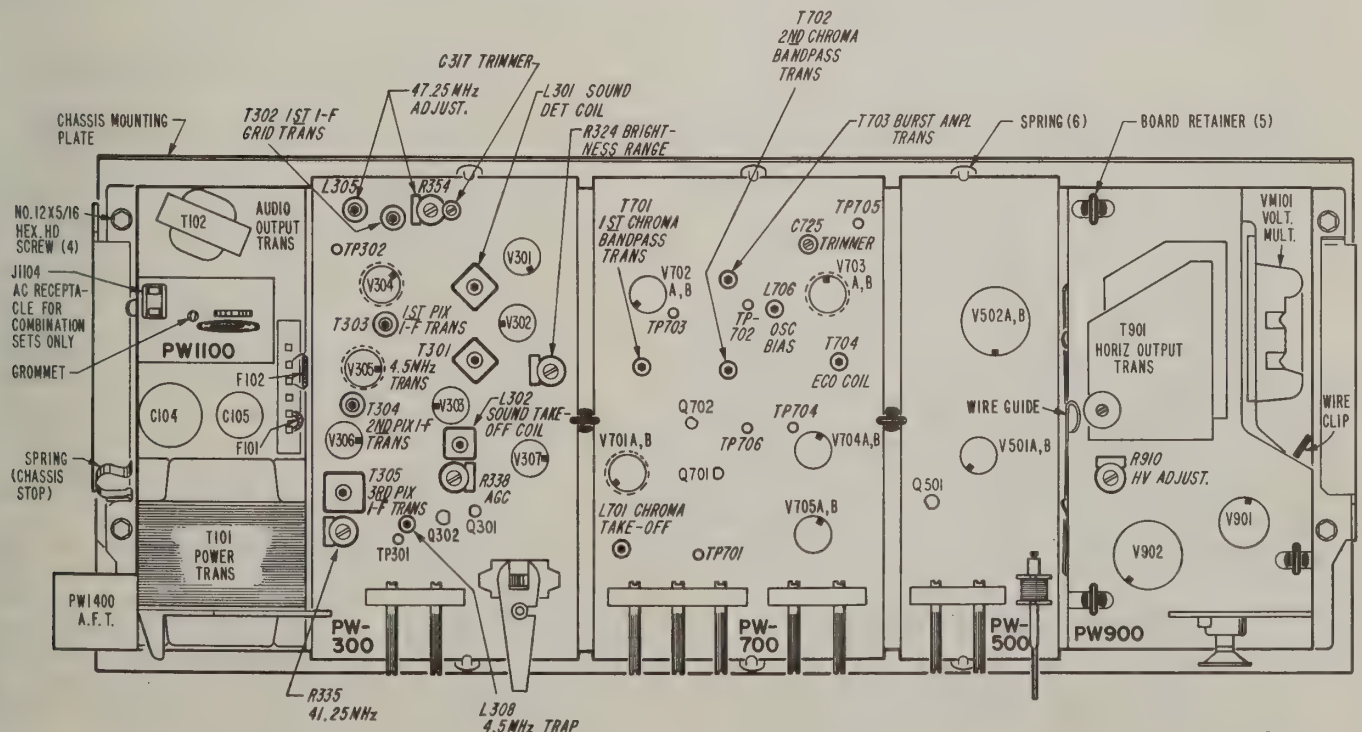
TELEVISION R-F FREQUENCY RANGE

Any of 70 UHF Channels 470 mc. to 890 mc.
Any of 12 VHF Channels 54mc.to88mc.,164mc.to 216mc.

TUNERS

25A1282-001 thru -004	VHF Tuner (Standard Kollsman)
V-201	6HA5 VHF R-F Amp.
V-202 A & B	6GJ7 Mixer and R-F Osc.
25A1283-001 thru -004	VHF Tuner (Sarkes Tarzian)
V-201	6HA5 VHF R-F Amp.
V-202 A & B	6LJ8 Osc. and Mixer

NOTE - For specific picture tube type for each Model
See Cabinet Miscellaneous List on inside of back cover.



SERVICE ADJUSTMENTS

NEW COLOR INSTRUMENTS

Color Television instruments leaving the factory are adjusted by experts in the set-up of color receivers. Color, temperature, purity and convergence should not be affected by normal handling of a receiver in its original packing. Thus, a minimum of set-up should be required.

Check for black and white picture (Color Temperature). Check the horizontal adjustment, focus, vertical linearity, height and horizontal and vertical centering. Observe the picture for good black and white reproduction over the entire screen area. No objectionable color shading should be evident.

IMPORTANT: Instruments should be at room temperature, approximately 70°F. for at least two hours before any set-up adjustments are performed. Instruments must be operated at least ten minutes at full beam current (brightness full without bloom) before purity or convergence adjustments are attempted.

EXTERNAL ANTENNA CONNECTIONS

When using a UHF or VHF antenna only, or both, connect the transmission line(s) to the proper antenna terminals at the rear of the receiver.

When a combination UHF/VHF antenna is to be used, having a single transmission line, a stub arrangement, such as is shown in Fig. 3, may be used to match single transmission line to the two receiver inputs if a coupler is not provided with the antenna.

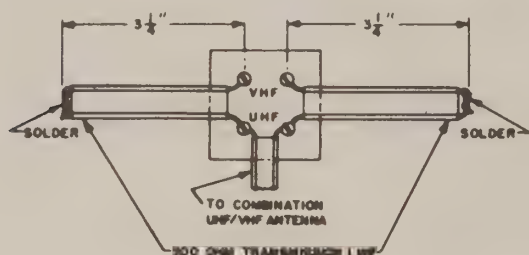


Figure 3.—Combination UHF/VHF Antenna Matching

DEGAUSSING

All instruments are equipped with an automatic degaussing circuit which effectively demagnetizes the picture tube each time the receiver is turned on. The degaussing circuit will operate any time the set is turned on after having been off for at least five minutes. The degaussing effect is confined to the picture tube since the coils are mounted on the ferrous tube shield. Should any part of the chassis or cabinet become magnetized, it will be necessary to degauss the affected area by means of a manual degaussing coil. Move the coil slowly around the parts to be demagnetized, then slowly withdraw for a distance of six feet before disconnecting the coil from the AC power supply. Automatic degaussing action may be checked by jumping RT1101 before instrument turn on. Degaussing effect will be observed on the screen when the jumper is removed after the receiver is operating.

LOW VOLTAGE CIRCUIT PROTECTION

A reset-type of circuit breaker is incorporated in the low voltage power supply. The circuit breaker is mounted on the rear apron of the chassis as shown in Fig. 1. To reset the breaker, push the red button all the way "in" and release. The breaker resets as the button reaches the outer position.

VERTICAL LINEARITY, HEIGHT AND CENTERING ADJUSTMENTS

Adjust the Vertical Linearity Control (R528A), the Height Control (R528B), the Vertical Centering Control (R107), and the Horizontal Centering Control (R902), until the picture or test pattern is centered and symmetrical from top to bottom. Make the final adjustment to just fill the mask at both top and bottom.

FOCUS

Adjust the focus (R915) at the rear of the chassis for maximum overall definition of fine picture detail.

A. G. C. ADJUSTMENT

Turn the A.G.C. control clockwise until the picture begins to bend or otherwise distort, and then retard the control slightly below the point where the distortion is eliminated. Change channels and observe the A.G.C. performance on a strong, local broadcast. Retard the A.G.C. control again if the picture does not immediately reappear when changing channels. For precise adjustment of A.G.C. connect the oscilloscope probe to the picture detector output (test point TP301 on PW300) and adjust for the point where the horizontal sync pulses are just beginning to clip while tuned to a strong, local broadcast. See schematic for location of TP301.

CHECK OF VHF R-F OSCILLATOR ADJUSTMENTS

Tune in all available stations to see that the receiver R-F Oscillator is adjusted to the proper frequency on all active channels.

All models incorporate the "One-Set" fine tuning feature which requires the following procedure for oscillator adjustment.

Turn channel selector to desired channel with AFT off, turn the fine tuning control for best picture color and sound. Under normal operation no further adjustment is required.

AUTOMATIC FINE TUNING CUSTOMIZING

The A.F.T. (Automatic Fine Tuning) circuits are critically and precisely aligned at the factory to produce a correctly tuned picture under normal conditions of signal pick-up. In some few cases of antenna installation and signal conditions the best picture may not be obtained when using the A.F.T.. This may be customized for the particular installation as follows. Move the A.F.T. switch to the OFF position. Turn the channel selector to a local station, preferably one transmitting color and turn the fine tuning control until the picture is WORMY. Carefully adjust the fine tuning control in the opposite direction until the WORMY condition of the picture just disappears. Fine tuning is now properly set. Move the A.F.T. switch to the ON position.

The quality of the picture or color intensity of the picture should not appreciably change. If it does then adjust L1403, Figure 1, (accessible thru the back cover and labeled A.F.T.) with a standard .076 hex core wrench until the picture quality and color intensity is essentially the same as when the A.F.T. switch is in the OFF position and the fine tuning control is properly set as previously described. Alternately moving the A.F.T. switch ON and OFF while observing the picture makes the adjustment quite easy.

Check the A.F.T. action on all local channels to be sure that the adjustment satisfies any peculiar reception conditions.

SERVICE ADJUSTMENTS

COLOR TEMPERATURE ADJUSTMENTS

Preset the following controls: the brightness and contrast controls about mid-range, color killer (R730B), fully counterclockwise, the red, blue and green screen controls, (R765A,B,&C), fully counterclockwise, brightness range (R324) fully clockwise, pix bias (R730A), (on some chassis), fully counterclockwise, the "Service-Normal Rast" switch (S301) to "Service".

Advance the screen controls so that each control just produces a line on the picture tube. To facilitate this observation, the lateral magnet may be displaced slightly so that each line may be viewed separately.

NOTE: If one or more controls fail to produce a line, readjust the pix bias control (R730A), until the line or lines appear.

Return the "Service-Normal-Rast" switch to "Normal" and with the brightness and contrast controls set for average viewing on a black and white program adjust the blue and green drive controls (R316A & B) for a gray raster. If a gray raster can not be obtained with adjustment of the drive controls, interchange the red and green cathode leads of the pix tube where they are plugged on the PW300 board at J307 and J309. The green drive level will now be fixed and the green drive control will adjust the red drive content.

Check the picture from highlights to lowlights. If the screen and drive controls are properly set good tracking will be achieved and the raster color will not change from high to low brightness levels.

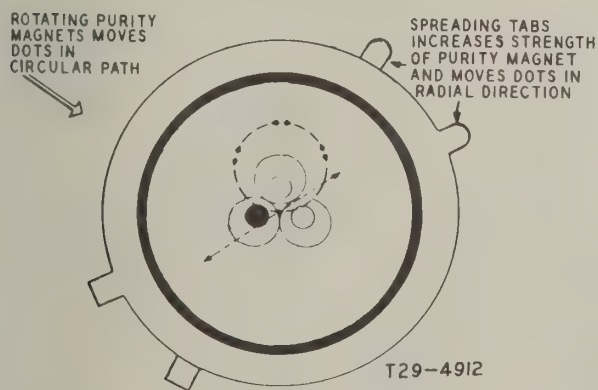


Figure 4.— Center Landing Adjustments

BRIGHTNESS RANGE ADJUSTMENT

After the Color Temperature adjustments are made, do the following: with 120 VAC line and "Service-Normal-Raster" switch in Rast position, turn Brightness control to minimum (CCW). Check for 25KV Ultor Voltage. If not, adjust H.V. Adjust (R910) control for 25KV. Turn Brightness control to maximum (CW), and adjust Brightness Range control (R324) for 23.5KV Ultor Voltage.

PURITY ADJUSTMENTS

NOTE: Before purity adjustments can be made, instrument should be operated with full brightness (without bloom) for a minimum of ten minutes and center convergence must be correct.

The receiver should always be facing either to the north or to the south when setting purity adjustments.

Purity adjustments are most accurate while observing RED FIELD ONLY.

To obtain Red Field move the Serv-Norm-Rast switch S301 located on PW300 to the RAST position and after turning the Blue and Green screen controls fully counterclockwise adjust the Red screen control to sufficient brightness to observe purity. The Blue and Green fields may be separately viewed by advancing these controls one at a time with the other two turned off.

Loosen the two wingscrews and yoke mounting ring screw and slide the yoke back against the convergence coils assembly. Adjust for a uniform red area in the center of the screen by spreading or rotating the purity magnet assembly located on the Blue lateral magnet housing assembly. (See Figs. 5A, 5B)

Spreading the tabs increases the magnet strength and moves beams in a radial direction. Rotating the purity magnets moves beams in a circular path. (Fig.4)

After center purity has been attained, slide yoke toward the picture tube bell while observing the entire screen. Position the yoke for the best overall red screen. If purity adjustments are made during minimum operating temperature conditions, the yoke should be set as close to rear edge of adjustment as is consistent with good purity. If receiver is hot (2-3 hours operating time) yoke should be placed as far forward as consistent with good purity.

Tighten the two wingscrews and yoke mounting ring screw.

Reactivate blue and green guns and observe all three beams. If screen is not a uniform white, reconverge center of screen and repeat purity adjustment.

OVERALL CONVERGENCE ADJUSTMENT

The receiver should always be facing either to the north or to the south during the purity adjustment. This assures that any effect of the earth's normal magnetic field upon beam landing will be negligible when the receiver is placed in its actual viewing location. Any color impurity induced by relocating the receiver will be removed by the Automatic Degaussing operation. The degaussing recurs any time the receiver is turned on, after being off for at least five minutes.

Adjust the receiver for a black and white picture. Check the Horizontal hold and the usual adjustments such as focus, vertical linearity, height and centering prior to proceeding with convergence.

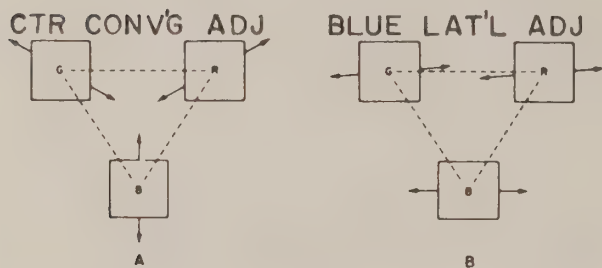
A Dot/Crosshatch Generator must be connected to the receiver for making the convergence adjustments.

SERVICE ADJUSTMENTS

FOR DOT/CROSSHATCH GENERATORS WITH RF OUTPUT

Turn receiver to a channel suitable for the particular generator. Clip the RF output cables of the generator directly to the VHF antenna input terminals of the receiver. Have the receiver in sharp focus and adjust the brightness just high enough to observe the pattern clearly.

Adjust the Red, Green and Blue center convergence magnets and the blue lateral magnet assembly to converge the beams in the center of the picture. Check center convergence periodically through the set-up procedure.



Dot Movement Pattern

The beams move at approximately the same angle as the convergence magnets are offset from the vertical plane. Blue, since it is mounted in a vertical plane, moves the blue beam up and down vertically; red and green move the respective beams on a line at about a 60° angle from the vertical. The thumbwheel adjustment of red, blue and green center convergence magnets can be rotated in either direction continuously.

The blue lateral assembly moves all three beams in a horizontal plane. The blue beam in one direction and the red and green beams in the opposite direction in a 5/1 ratio. Blue having the greatest lateral shift. The blue lateral magnets are adjusted by turning the knurled knob at the top of the assembly (Fig. 5A); or turning the large outside knurled wheel (Fig. 5B). If sufficient blue beam movement to the right or left does not occur thru full motion of the knurled wheel (Fig. 5B only), continue rotation of the adjustment wheel to force magnet carriers out of detent and rotate them 1/2 turn to the next detented position. Then readjust blue lateral landing by turning the knurled wheel in the opposite direction.

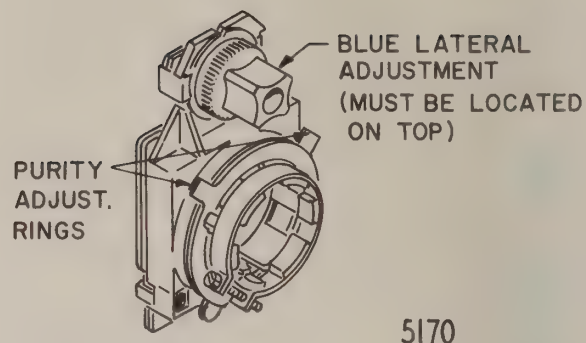


Figure 5A — Blue Lateral Magnet and Purity Ring Assembly

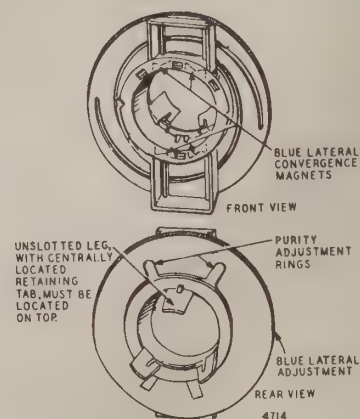


Figure 5B — Blue Lateral Magnet and Purity Ring Assembly

SERVICE ADJUSTMENTS

BLUE HORIZONTAL SHAPING COIL

The Blue Horizontal Shape Coil L803 is not a part of the convergence set-up adjustments. Misadjustment of this coil will cause horizontal distortion and eventual failure of one or more horizontal convergence components.

If, for any reason, L803 becomes misadjusted, it can be reset as follows:

Connect an oscilloscope between Terminal 3 of PW800 (white lead with blue tracer) and ground. Adjust L803 until the horizontal harmonic "bump" is at the 50% point on the sine wave slope. Waveform should be approximately 45 v P.P. (Fig. 6)

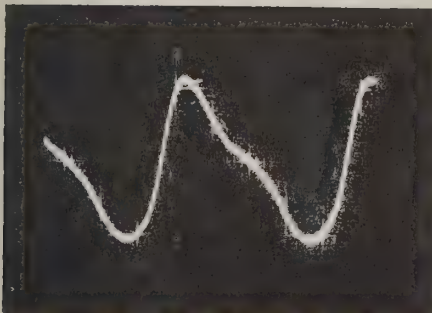


Figure 6—Blue Horizontal Waveshape
Term. 3 PW 800

TOP AND BOTTOM PINCUSHION ADJUSTMENT

The top and bottom pincushion adjustment is factory preset and normally needs no further adjustment.

Top and bottom pincushion adjustments may be made if necessary by adjusting for straight horizontal lines at the top and bottom of the raster.

With a crosshatch pattern on the screen, turn R111 full clockwise. Adjust L105 to move the top upward curvature to the top center of the screen. Then adjust R111 for straight horizontal lines. L105 changes the phase of the horizontal correction waveform and R111 affects its amplitude. See Fig. 1 for location L105.

The illustration shows the effect of extreme misadjustment of L105.

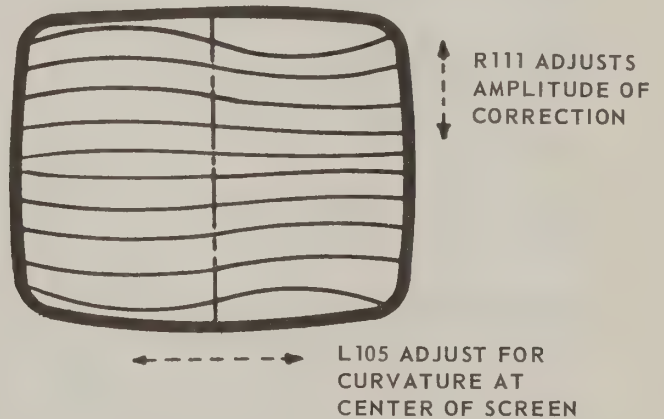


Figure 7.—Misadjusted Top & Bottom
Pincushion Adjustment

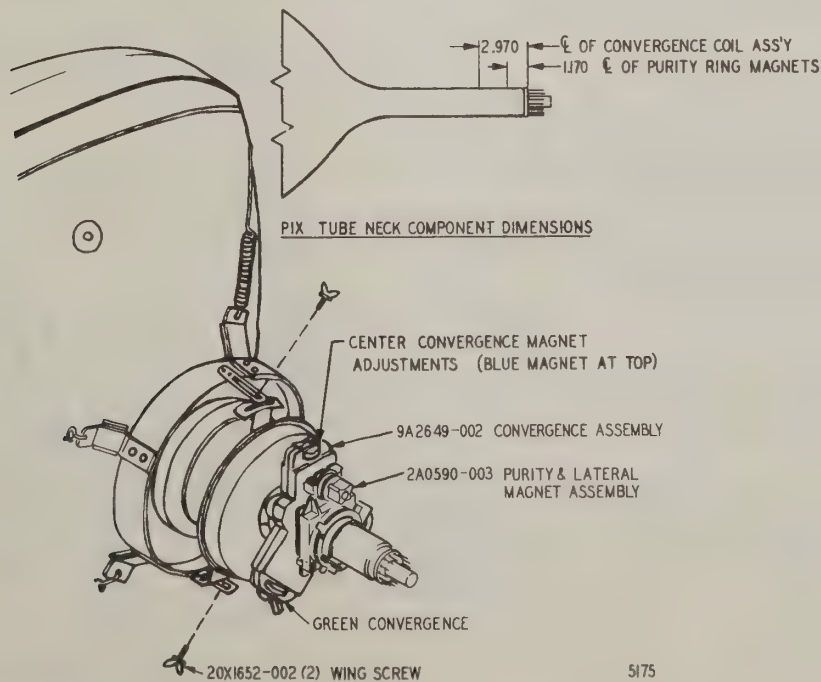
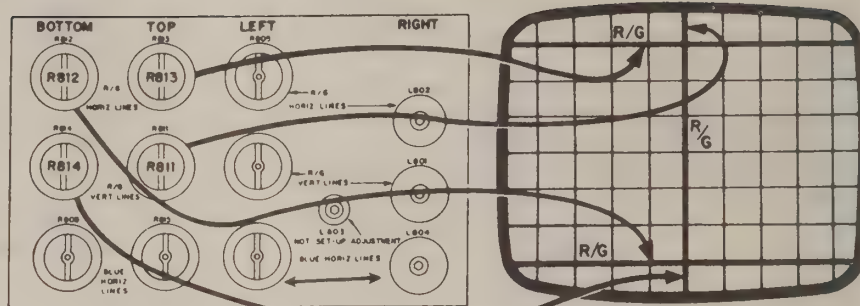


Figure 8. — Tube Assembly & Components

SERVICE ADJUSTMENTS

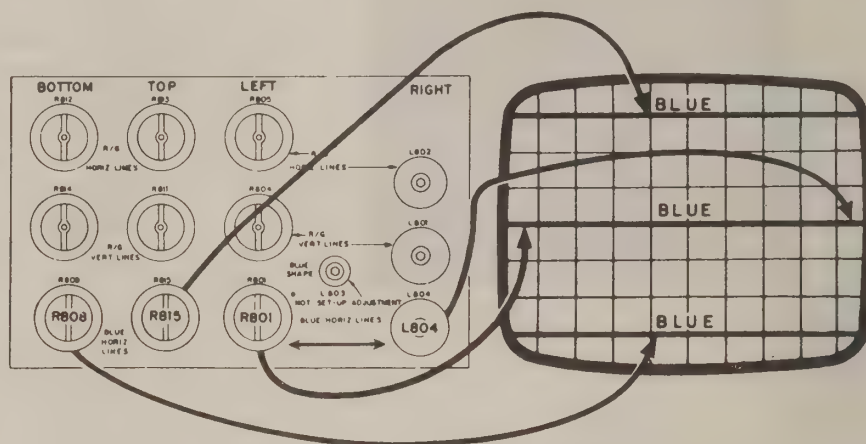
CONVERGENCE

1. Use either crosshatch or dot pattern for center converge.
2. Converge center of screen with red, green, and blue magnets and the blue lateral magnet.
3. Adjust R811 and R814 for convergence (parallelism) of R/G vertical center line.
4. Readjust center convergence if necessary.
5. Adjust R812 to converge bottom R/G horizontal lines and R813 to converge top R/G horizontal lines at center line of screen.
6. Adjust R801 and L804 for straight horizontal blue center line.
7. Adjust R808 and R815 for uniform displacement of blue horizontal lines along center vertical lines.
8. Converge blue horizontal lines with R/G horizontal lines by adjusting the blue convergence magnet. Adjust red and green magnets if necessary.
9. Repeat steps 6 through 8 if necessary.
10. Adjust alternately L801 and R804 for right and left side convergence of R/G vertical lines.
11. Adjust alternately L802 and R805 for convergence of R/G horizontal center line.
12. Converge center of screen and repeat steps 10 and 11 if necessary.
13. Minor touch-up adjustments may be made using the appropriate controls.



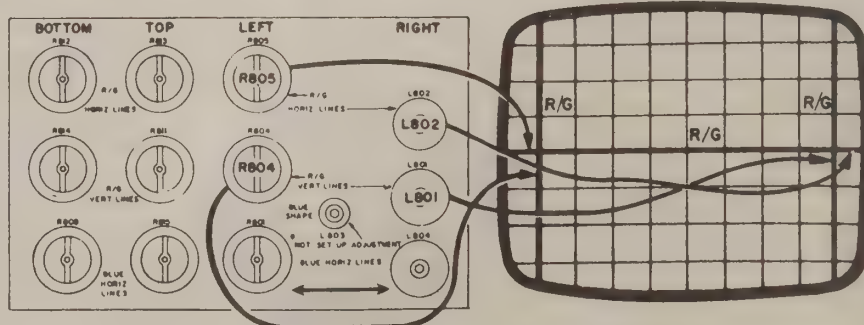
STEPS 3 AND 5 ADJUSTMENTS

Effect of R811, R812, R813 and R814 Adjustment



STEPS 6 AND 7 ADJUSTMENTS

Effect of R801, L804, R808 and R815 Adjustment



STEPS 10 AND 11 ADJUSTMENTS

Effect of L801, R804, L802 and R805 Adjustment

INSTRUMENT DISASSEMBLY

Recommended Tools: Screwdriver (4" or 6" Shank), 1/4", 5/16" and 3/8" Socket Head Wrench (4" or 6" Shank) or Nut driver, 5/16" "Off-Set" Socket Head.

Chassis Removal

1. Disconnect line cord from wall outlet. Remove the cabinet back and disconnect the VHF and UHF antenna terminals from the tuner.
- *2. Remove the four 5/16" hex head screws securing the chassis to the chassis retainer bracket.
3. Disconnect the speaker leads from speaker.
4. Disconnect the picture tube socket.
5. Disconnect the yoke plug and convergence plug.
6. Disconnect the automatic degaussing plug from the power supply board.
7. Disconnect the I.F. cable plug at the tuner.
8. Disconnect the tuner cable plug, secondary control plug, and auxiliary control plug from chassis.
9. Disconnect the volume control plug from the I.F. — pix sound board.
10. Disconnect the anode lead from the picture tube.
11. Slowly slide chassis rearward until chassis strikes spring clip (at left side of chassis from rear). Then move front end of clip forward with a slight pressure so as to clear chassis tab and continue to slide chassis rearward out of chassis retainer bracket.
12. When reinstalling the chassis, brace the cabinet to prevent accidental tipping.

***In later production only 2 screws at rear are used for mounting chassis to the chassis retainer bracket.**

Tuner Removal

1. Remove the VHF and UHF channel selector knobs, UHF indicator dial (some models), Fine tuning knob, Off-On-Volume knob (some models), Color knob (some models), Tint knob (some models), and AFT knob (some models) from the front of cabinet.
2. Remove the three keps hex nuts and the 5/16" hex head screws or four 1/4" hex head screw, or four 3/8" hex self threading nuts (depending on chassis model).
3. After removal of necessary plugs I.F. cable, Tuner cable and Secondary control cable (some models), the tuner assembly may be completely removed from the cabinet or mounted to the service bracket located on top of power transformer using two #8-32 x 1/4" self tapping screws (not supplied with receiver).

Secondary Control Bracket Removal

(Some models where it is not part of tuner assembly)

1. After removal of secondary control plug from chassis and disconnecting pilot light plug to tuner, pull off the secondary control knobs on front panel (Volume, Color and Tint).
2. Remove the three 5/16" hex head screws holding the secondary control bracket assembly to the rear of the pix mask.

Auxiliary Control Bracket Removal (Brightness, Vertical Hold and Contrast)

1. After removal of auxiliary control plug from chassis, remove the two hex head screws or the two self threading nuts (depending on chassis model). Tilting knob end of assembly up slightly when removing bracket allows complete auxiliary control bracket removal.

PICTURE TUBE REMOVAL AND REPLACEMENT

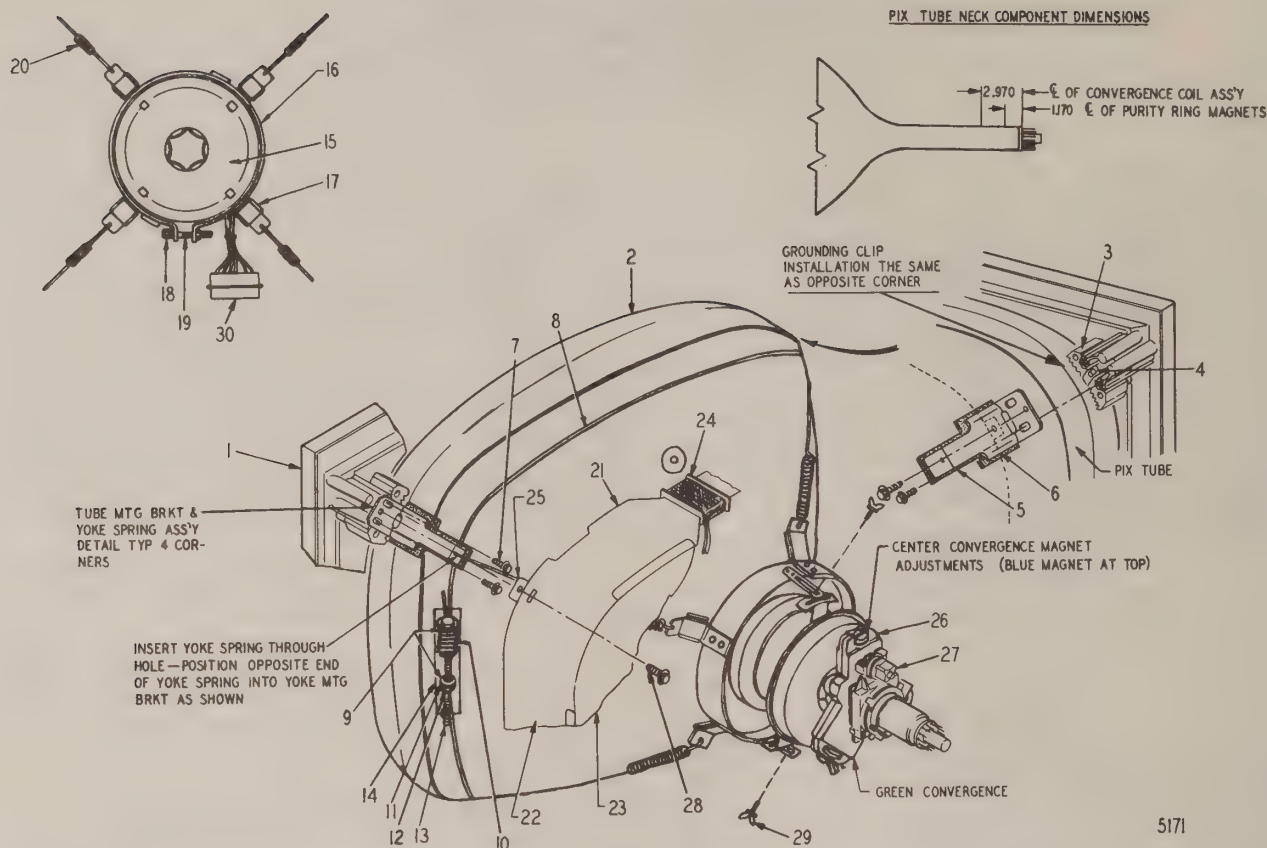
NOTE—Chassis must be removed before replacing pix tube.

1. Loosen screw on blue lateral magnet assembly and slide assembly from the neck of the tube.
2. Loosen clamp screw or clip holding the convergence coils assembly and remove the screw holding the convergence board assembly and remove from cabinet.
3. Remove the two wing screws and loosen tensioning screw in yoke mounting ring and remove yoke.
4. Remove the four screws holding the purity shield to the pix tube corner brackets, ground lead assembly and remove shield.
5. Unhook four springs from yoke mounting and remove from the corner brackets.
6. Loosen wire mounting ring.
7. Remove the four pix tube corner brackets.
8. Carefully lift pix tube out of cabinet.

NOTE: If the four rubber bumpers move out of position replace them.

9. Remove yoke mounting ring from pix tube.
NOTE: Avoid distorting the yoke mounting ring during removal. Tabs should be reformed if they are bent during ring removal.
10. Using NEW 89X0068-001 double faced tape on the tabs of the yoke mounting ring and using the yoke snug against the bell of the tube as a positioning fixture remount the ring to the pix tube.
11. Carefully install new picture tube and reverse steps 1 through 10.
NOTE—Remove cushion from under mounting ring on old pix tube and apply cushion to new pix tube.
12. Return cabinet to the upright position and reverse steps 1 through 12 of chassis removal.

PICTURE TUBE ASSEMBLY & COMPONENTS



5171

Item No.	Description	Part Nos.				Qty.
		25" Bonded	25" Banded Kimcode	23" Bonded	23" Banded Kimcode	
1	Pix Mask	4X(See Parts List)	4X()	4X()	4X()	1
2	Pix Tube	88X(See Parts List)	88X()	88X()	88X()	1
3	Pix Tube Mounting Bumper	8X0330-001	8X0336-001	8X0313-001	8X0327-001	4
4	Grounding Clip		30X0700-001		30X0700-001	2
5	Cushion	8X0322-001	8X0322-001	8X0322-001	8X0322-001	4
6	Tube Mtg. Brkt.	25X2678-001	25X2739-001	25X2678-001	25X2739-001	4
7	Sems Screw, #10-24 x 1/2	20X1794-049	20X1794-049	20X1794-049	20X1794-049	8
8	Mounting Ring	28X0761-001	28X0761-001	28X0725-001	28X0725-001	1
9	Eyelet	20X1858-000	20X1858-000	20X1858-000	20X1858-000	2
10	Compression Spring	28X0674-000	28X0674-000	28X0674-000	28X0674-000	1
11	Washer	19X0521-000	19X0521-000	19X0521-000	19X0521-000	2
12	Keps Nut, #10-32	20X1877-001	20X1877-001	20X1877-001	20X1877-001	1
13	Sems Screw, #10-32 x 3	20X1794-084	20X1794-084	20X1794-084	20X1794-084	1
14	Cushion	8X0317-008	8X0317-008	8X0317-008	8X0317-008	1
15	Deflection Yoke (Incl. Item 30)	9A2707-001	9A2707-001	9A2707-001	9A2707-001	1
16	Bracket Yoke Mtg. Ass'y.	38A3749-000	38A3749-000	38A3749-000	38A3749-000	1
17	1" Tape	89X0068-001	89X0068-001	89X0068-001	89X0068-001	4
18	Spring	28X0737-001	28X0737-001	28X0737-001	28X0737-001	1
19	Screw, #10-32 x 2 HWH	303X1704-632	303X1704-632	303X1704-632	303X1704-632	1
20	Yoke Spring	28X0733-008	28X0733-009	28X0733-002	28X0733-007	4
*21	Purity Shield/Degaussing Ass'y.	38A4169-000	38A4169-000	38A4140-000	38A4140-000	1
22	Shield	32X0497-003	32X0497-003	32X0497-002	32X0497-002	2
*23	Purity Shield	32X0503-001	32X0503-001	32X0499-001	32X0499-001	2
24	Degaussing Coil	9A2711-001	9A2711-001	9A2711-001	9A2711-001	2
25	Speed Clip	20X1931-001	20X1931-001	20X1931-001	20X1931-001	4
26	Convergence Ass'y.	9A2649-002	9A2649-002	9A2649-002	9A2649-002	1
27	Purity & Lateral Magnet Ass'y.	2A0590-003	2A0590-003	2A0590-003	2A0590-003	1
28	#8 x 5/8 SL HH TP A	20X1794-002	20X1794-002	20X1794-002	20X1794-002	4
29	Wing Screw	20X1652-002	20X1652-002	20X1652-002	20X1652-002	2
30	Yoke Plug Housing	6A0379-001	6A0379-001	6A0379-001	6A0379-001	1

*Items under 23"V Banded Kimcode listing are the same as for 23"V Banded Kimcode w/Metal Cabinet except for Item 21 and 23.

*21 38A4418-000 *23 Not Required

TEST EQUIPMENT

To facilitate service and alignment of these chassis, it is recommended that the following test equipment be used to assure proper performance of the instrument.

ABSORPTION TYPE VIDEO MARKER BOX.—Marker Box to provide the following frequencies: 0.5 mhz.; 1.5 mhz.; 2.5 mhz.; 3.08 mhz.; 3.58 mhz.; 4.08 mhz. and 4.5 mhz.

BIAS SUPPLY.—Bias source to supply three outputs variable between 0-15 volts D.C.

COLOR BAR/DOT/CROSS-HATCH GENERATOR.

DEMAGNETIZING COIL.—Approximately 425 turns of #20 enameled wire 12 inches in diameter. Connect across 120 volt 60 Hz AC source.

VTVM.—A voltmeter with a 1.5 volt DC or lower scale is required with appropriate probes. (Low capacity probe, diode probe, and High Voltage Probe).

MATCHING PADS.—See Figs. 12 through 17.

OSCILLOSCOPE.—Wide band oscilloscope.

R-F MODULATOR

VHF SWEEP GENERATOR.—Meeting the following requirements:

- (a) Frequency Ranges
 - 0 to 5 mhz. Video Sweep
 - 35 to 90 mhz., 1 mhz. to 12 mhz. sweep width
 - 170 to 225 mhz., 12 mhz. sweep width
- (b) Output adjustable with at least .1 volt maximum.

CRYSTAL CALIBRATED MARKER GENERATOR.

To provide the following frequencies with crystal accuracy:

- (a) Intermediate frequencies 4.5 mhz., 40.0 mhz. to 60.0 mhz.
- (b) Radio frequencies

Channel Number	Picture Carrier Freq. Mhz.	Sound Carrier Freq. Mhz.	Receiver R-F Osc. Freq. Mhz.
2	55.25	59.75	101
3	61.25	65.75	107
4	67.25	71.75	113
5	77.25	81.75	123
6	83.25	87.75	129
7	175.25	179.75	221
8	181.25	185.75	227
9	187.25	191.75	233
10	193.25	197.75	239
11	199.25	203.75	245
12	205.25	209.75	251
13	211.25	215.75	257

- (c) Output of these ranges should be adjustable and at least .1 volt maximum.

VHF HETERODYNE FREQUENCY METER with crystal calibrator if the signal generator is not crystal controlled.

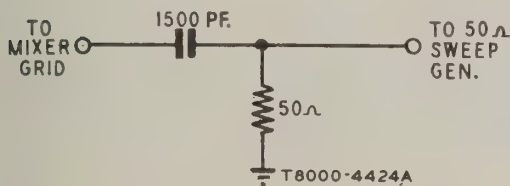


Figure 12 — Mixer Grid Matching Pad

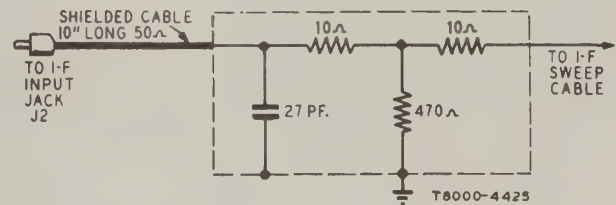


Figure 13 — Tuner IF Input Head

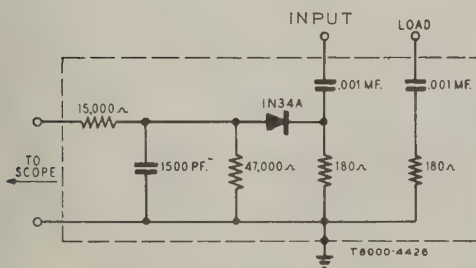


Figure 14 - I-F Detector Test Block

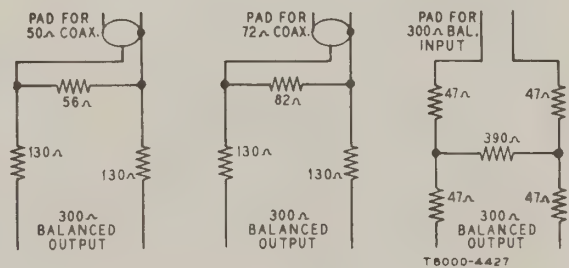


Figure 15 — Sweep Attenuator Pads

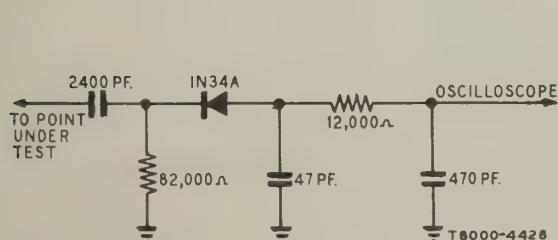


Figure 16 — Video Detector Test Block

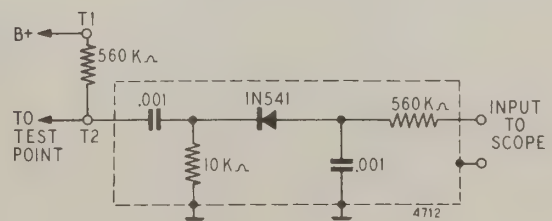


Figure 17 — Sound Detector Test Block

GENERAL ALIGNMENT INSTRUCTIONS

EQUIPMENT

The test equipment specified on page 11, or its equivalent, is required to properly perform the alignment procedures which are outlined on the following pages. Use of equipment which does not meet these requirements may result in the inability to properly align the instrument.

A warm-up period of at least fifteen minutes should be allowed for proper stabilization of equipment such as Signal and Sweep Generators.

It is essential that the proper bias values as specified are maintained during alignment to insure the proper results.

EQUIPMENT TERMINATIONS

The alignment pads and the input head are designed for correct matching of the equipment to the circuits involved. Failure to use proper matching will result in responses which cannot be depended upon as representing the true operation of the receiver. The pads should be constructed as compactly as possible and all unshielded leads at the end of the test equipment cables should be as short as possible, preferably not in excess of one inch long.

In many instances a small ceramic capacitor of approximately 1000 mmf. connected from the oscilloscope probe to ground will eliminate stray pick-up of unwanted signals. If used, make sure the capacitor does not affect the shape of the response being observed.

HORIZONTAL INTERFERENCE

Interference from the horizontal sweep circuits of the receiver may appear on the responses making it difficult to observe a clearly defined trace. To avoid

such interference, the horizontal circuits may be disabled during alignment of the IF, RF and Video sections of the receiver.

The horizontal circuits in these receivers should be disabled in the following manner: Remove the horizontal output tube V902. Connect a 1400 ohm, 100-watt resistor from the +280-volt bus to ground, to load the B+ supply by an amount equivalent to the horizontal circuit load.

If interference is encountered from the vertical deflection circuits during alignment, switch the "Serv-Norm-Rast" switch on the rear of the chassis to the "Service" position.

SIGNAL OVERLOAD

Use of excessive signal from the sweep generator can cause overloading of the receiver circuits. To determine that this condition is not present and that the response curve is true, turn the sweep generator output to zero and then gradually increase the output until a response is obtained. Further increase of the sweep output should not change the configuration of the response except in amplitude. If the response changes in configuration, such as flattening at the top or dropping below the base line at the bottom, decrease the sweep output to restore the proper configuration. The oscilloscope gain should be run as high as possible to maintain a usable pattern with the peak-to-peak values specified, thus requiring a lower output from the sweep generator and less chance of overload.

Insertion of markers from the signal generator should not cause distortion of the response. The markers should be kept as small as possible and still remain visible.

25A1282-001 THRU -004 (STANDARD KOLLSMAN) TUNER R-F ALIGNMENT FOR SPECIFIC TUNER BREAKDOWN – SEE PARTS LIST

TEST EQUIPMENT CONNECTIONS

- BIAS** Apply – 2.5 volts to a.g.c terminal on tuner. Ground positive lead to tuner case.
- OSCILLOSCOPE** Connect to RF Test Point as shown in Fig. 18 using direct probe. Set "scope" for 1.5 to 2 volts peak to peak.
- SWEEP GENERATOR** Connect to antenna terminals through pad shown in Fig. 15.
- SIGNAL GENERATOR** Couple RF output cable loosely to sweep cable to provide markers. Insert insulated wire into top of Oscillator/Mixer tube shield. Connect other end to "RF in" terminals of generator.

ALIGNMENT PROCEDURE					
STEP		SWEEP GENERATOR	SIGNAL GENERATOR	ADJUST	REMARKS
Shield must be in place during alignment.					
1	Adjust RF Plate and Mixer Grid on Channel 10	Channel 10	193.25 mhz. 197.75 mhz.	C205 & C211	Refer to Fig. 18 for adjustment locations and responses. Adjust for approximate correct waveshape as shown in "A".
Change the bias at a.g.c. terminals to - 15 volts.					
2	Adjust neutralization on Channel 10	Channel 10 (Maximum Output)	_____	C204	Connect "scope" to detector (TP302) output and set for maximum gain. Adjust C204 for minimum response.
Return bias at a.g.c. terminal to - 2.5 volts.					
3	Recheck Channel 10 Response	Channel 10	193.25 mhz. 197.75 mhz.	C205	Re-check C205 setting as RF plate and neutralizing adjustments interact.
4	Check tracking and response on all channels. Should be similar to Fig. "A". If difficulty is encountered in obtaining response of Fig. "A," adjustment of RF Plate and/or mixer coils may be required.				

CAUTION should be observed on adjustment of coils. Permissible pass band shown in Fig "B".

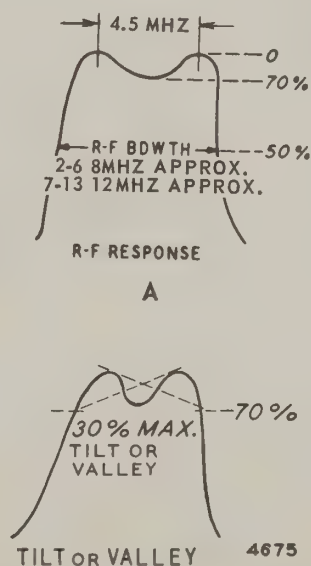
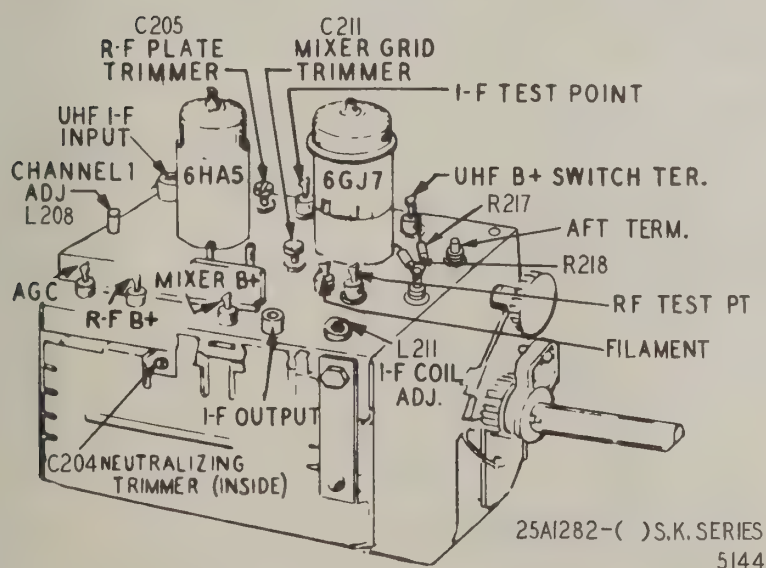
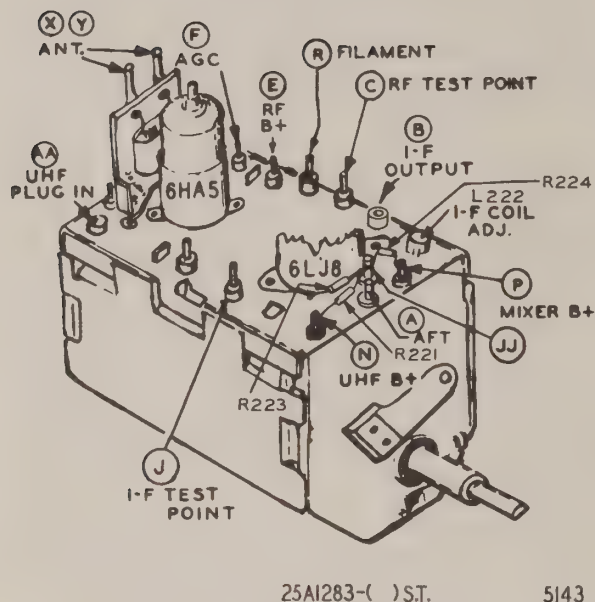


Figure 18 – Standard Kollsman Tuner Adjustments & Connections

**25A1283-001 THRU -004 SARKES-TARZIAN VHF TUNER INFORMATION
FOR SPECIFIC TUNER BREAKDOWN – SEE PARTS LIST**



TUNER ALIGNMENT — This tuner has been adjusted at the factory and once the inductors have been set it should not be necessary to adjust them in the field. The tuner features high stability and trouble-free operation, and in general R.F. and mixer alignment is permanent. If it has been positively established that complete tuner alignment is necessary, return the tuner to WELLS-GARDNER ELECTRONICS Corporation for repair or replacement.

CHECK OF V.H.F. R.F. OSCILLATOR ADJUSTMENTS — Tune in all available stations to see that the receiver R.F. oscillator is adjusted to the proper frequency on all active channels. All models incorporate the "One Set" fine tuning feature which requires the following procedure for oscillator adjustment:

Turn channel selector to desired channel, turn the fine tuning control for best picture and sound. Under normal operation no further adjustment is required.

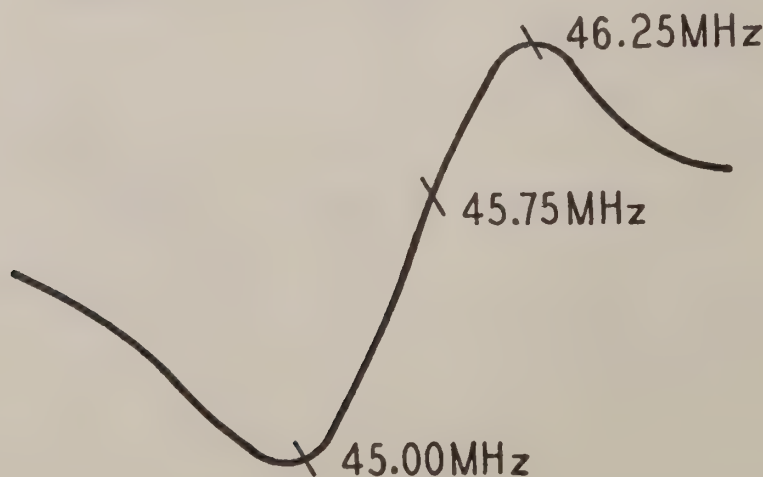
Figure 19 — Sarkes-Tarzian Tuner Adjustments & Connections

**ALIGNMENT
SWEEP ALIGNMENT OF AUTOMATIC FINE TUNING**

TEST EQUIPMENT CONNECTIONS:

- GENERAL** Disable the horizontal sweep section of the receiver (see "General Alignment Instructions").
- SWEEP GENERATOR** . . . Connect in series with matching pad, shown in Fig. 12, to mixer grid test point on tuner.
- SIGNAL GENERATOR** . . . Couple loosely to sweep generator output cable to provide markers.
- BIAS SUPPLY** Apply -5 volts to TP302. Apply -15 volts to the tuner a.g.c. (J303-5).
- OSCILLOSCOPE** Connect to TP301.

- PROCEDURE** — 1. Adjust Signal Generator output for 3 volts peak to peak at detector (TP301).
2. Remove oscilloscope from TP301. Disconnect lead from C1412 to tuners and connect oscilloscope to C1412.
3. Refer to Fig. 1 Adjust L1403 for zero output at 45.75 MHZ.
4. Adjust L1401 for maximum positive amplitude at 46.25 MHZ.
5. Adjust L1402 for maximum negative amplitude at 45 MHZ.
6. If 45.75 MHZ needs further adjustment, repeat Steps 3, 4, and 5.
7. Reconnect lead between C1412 and Tuners.



ALIGNMENT

SOUND I-F, SOUND DEMODULATOR AND 4.5 MHZ TRAP ALIGNMENT

TEST EQUIPMENT CONNECTIONS:

GENERAL Connect a 330 ohm resistor in series with a 2 mfd. capacitor from pin 5 of V303 to ground. Connect Video Det. Test Block (Fig. 16) to pin 5 of V303. Connect the Sound Detector Test Block (Fig. 17) to pin 1 of V302. Ground pin 7 of V302 with a short jumper. Use a "live" signal from local TV station for signal source.

BIAS SUPPLY Connect a -15 volt bias source to J303-5. (R.F.A.G.C.)

VACUUM TUBE VOLTMETER, . Connect to the output of the Video Detector Test Block (Fig. 16).

ALIGNMENT PROCEDURE			
See "General Alignment Instructions" Before Attempting Alignment			
STEP		ADJUST	REMARKS
1	Adjust Sound I.F. Take-Off Coil	L302	Adjust L302 for maximum d.c. on meter. Set bias at a.g.c. terminal to produce 0.5 volt on meter when finally peaked. (Core set on peak at top end of coil.)
Remove the video detector test block, 2 mfd. capacitor, and the 330 ohm load at pin 5 of V303. Connect the meter to the output of the sound detector test block.			
2	Adjust Sound I.F. Transformer Primary and Secondary	T301 (top and bottom)	Adjust T301 top and bottom for maximum deflection on meter. Adjust a.g.c. bias to produce 1.0 volt on meter when finally peaked. Peak cores at open end of coils.
Repeat Steps 1 and 2 if necessary to obtain maximum indication on the meter, maintaining 0.5 volt in Step 1 and 1.0 volt in Step 2.			
3	Disconnect the sound detector test block and the jumper from pin 7 of V302. Turn the bias supply for 0 volts at the AGC terminal. Adjust the volume control for normal volume level. Turn the core of L301 flush with top of coil form.		
4	Adjust Sound Demodulator Transformer	Listening to the audio output, adjust L301 clockwise to a peak. Continue clockwise to a second louder peak and adjust L301 for a maximum on this second peak. Decrease the signal input by increasing the a.g.c. bias until signal distorts. Adjust T301 (top) for clear signal without distortion. Continue reducing signal input and adjusting of T301 (top) until a very sharp point is obtained where the signal is clear, with distortion occurring as T301 (top) is adjusted the slightest amount in either direction. (NOTE: In extremely strong signal areas, the bias may not produce a weak enough signal to make the signal distort. If so, further reduction of the signal can be obtained by loosely coupling the antenna to the receiver or by use of an attenuator pad in the antenna lead.)	
Remove the bias supply. Set the fine tuning to produce a 4.5 mhz. beat on the picture tube.			
5	Adjust 4.5 mhz Trap	L308	Adjust L308 for minimum 4.5 mhz. indication on the picture tube.

ALIGNMENT

SWEEP ALIGNMENT OF PICTURE I-F

TEST EQUIPMENT CONNECTIONS

GENERAL. Disable the horizontal sweep section of the receiver (see "General Alignment Instructions").

BIAS SUPPLY Ground TP302 of PW300. Apply— 15 volts to the tuner a.g.c. (J303-5).

OSCILLOSCOPE. Connect to pin 5 of V304 using IF Test Block shown in Fig. 14. Load the plate of the 2nd picture IF, pin 5 of V305, by connecting to "LOAD" of IF Test Block.

SWEEP GENERATOR Connect in series with matching pad, shown in Fig. 12, to mixer grid test point on tuner.

SIGNAL GENERATOR. Couple loosely to sweep generator output cable to provide markers.

ALIGNMENT PROCEDURE

See "General Alignment Instructions" Before Attempting Alignment

STEP		SWEEP GENERATOR	SIGNAL GENERATOR	ADJUST	REMARKS
Set channel selector to channel 13					
1	Adjust mixer plate trans., 1st pix. IF grid transformer & input coup. cap.	40-50 MHz (IF)	42.17 MHz 45.75 MHz	L211 SKI L222 Sarkes C317 T302	Sweep set for 0.1 volts peak to peak on "scope." Adjust for maximum gain and response "A" in Fig. 20.
2	Check 47.25 MHz IF input trap	40-50 MHz (IF)	47.25 MHz	L305 & R354	Adjust for minimum response at 47.25 MHz.
3	Recheck adjustment of L211 or L222, T302 and C317 for correct response as shown in "A" of Fig. 20. Repeat steps 1 and 2 if necessary.				
Remove the IF test block from the 1st picture IF plate and the load from the 2nd picture IF plate. Calibrate the oscilloscope for 2.5 volts peak to peak and connect to TP301 in series with a 10,000 ohm resistor. Remove ground from TP302 of PW300 and apply -7.0V to TP302 of PW300.					
4	Align 3rd pix. IF transformer	40-50 MHz (IF)	41.65 MHz 42.17 MHz 42.75 MHz 45.00 MHz 45.75 MHz	T305 (bottom)	Align T305 (tilts curve), T304 (affects 42.17 MHz side) and T303 (affects 45.75 MHz side) alternately to obtain the response shown in "B" of Fig. 20. Use 2.5 volts peak to peak on "scope."
5	Align 2nd pix. IF transformer	40-50 MHz (IF)		T304	
6	Align 1st pix. IF transformer	40-50 MHz (IF)		T303	
7	Check 41.25 MHz attenuation at 3rd pix IF	40-50 MHz (IF)	41.25 MHz Strong Marker	T305 (top) & R335	Adjust for minimum at 41.25 MHz along with response "B".
Connect VHF sweep generator to the VHF antenna terminals using pad shown in Fig. 15. Decrease the RF a.g.c. bias, to -3 volts.					
8	Check RF/IF overall on VHF	Channels 13 to 2	Channels 13 to 2 Pix, and Sound Markers	T305 (bottom)	Retouch slightly, if necessary, to correct for any overall tilt. Maintain response "B".
NOTE:—In step 10 above, if only one or two channels are out of limits the tuner RF alignment should be checked. However, any tilt consistent to all channels may be corrected by IF retouch. If any major adjustment is required, be certain to repeat step 7.					
Connect the UHF sweep generator to the UHF antenna terminals					
9	Check RF/IF overall on UHF	Tune entire UHF range	Channel Markers	* SKI L201 Sarkes	Retouch slightly to correct any overall tilt. Do not retouch IF adjustments on UHF check of overall.

* No Adj. for SKI Tuner.

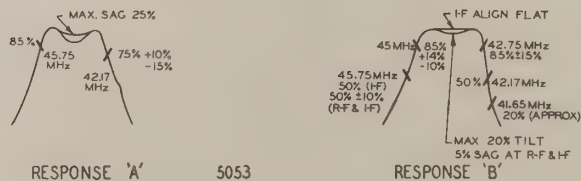


Figure 20—Sweep Alignment of Pix I-F

ALIGNMENT

CHROMA BANDPASS ALIGNMENT

TEST EQUIPMENT CONNECTIONS:

GENERAL. Disable the horizontal sweep section of the receiver (see "General Alignment Instructions").

BIAS SUPPLY Apply -15 volts to tuner a.g.c. (J303-5) on PW300
Apply -7.0volts to I.F. a.g.c. (TP302)
Apply -4 volts to 1st Chroma amp (TP701) on PW700

OSCILLOSCOPE. Connect to TP705 using Video Detector Test Block (Fig. 16) (Fig 16)

R-F MODULATOR Connect as shown in Fig. 21

SIGNAL GENERATOR. Connect as shown in Fig. 21

SWEEP GENERATOR Connect as shown in Fig. 21

MARKER BOX. Connect as shown in Fig. 21

NOTE: The I.F., especially the 41.25 MHZ and 4.5 MHZ traps, must be properly aligned to achieve proper bandpass alignment.

ALIGNMENT PROCEDURE					
STEP		SWEEP GENERATOR	SIGNAL GENERATOR	ADJUST	REMARKS
1	Adjust Chroma Take-off Coil	0-5 MHZ. Sweep-width	45.75 MHZ.	L701	Adjust chroma take-off coil (L701) for maximum peak at 4.0 MHZ. marker. (Do not exceed 0.5 V peak to peak on scope).
2	Adjust 1st Chroma Bandpass Transformer	0-5 MHZ. Sweep-width	45.75 MHZ.	T701 (Top & bottom cores)	Adjust bottom core of T701 until 3.0 MHZ. marker is on top of curve. Adjust top core of T701 to correct for any tilt. See Fig. 22.
Move Video Detector Test Block to TP706 and adjust color control for 1 volt P-P.					
3	Adjust 2nd Chroma Bandpass Transformer	0-5 MHZ. Sweep-width	45.75 MHZ.	T702	Adjust T702 to remove any tilt in the response. See Figure 22.

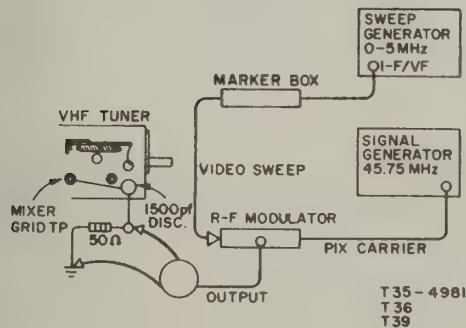


Figure 21 – Chroma Bandpass Alignment

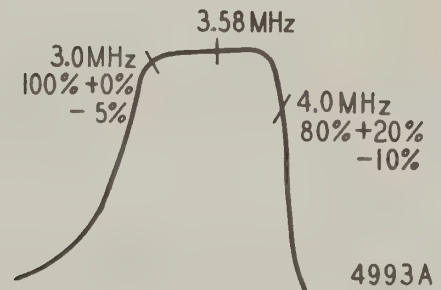


Figure 22 – Chroma Bandpass Waveform

ALIGNMENT

COLOR AFPC ALIGNMENT

TEST EQUIPMENT CONNECTIONS:

GENERAL Apply color signal to chassis (either station or color bar generator). Set killer control fully clockwise. Be certain the horizontal deflection circuits are operating and the a.g.c. control is set properly. Set color control fully maximum. Tint control fully minimum.

VTVM Connect in series with a 470K resistor to TP702.

ALIGNMENT PROCEDURE			
STEP		ADJUST	REMARKS
1	Ground TP701, Ground TP703 thru a silicon diode (cathode to ground) (66X0023-001 or equiv.)		
2	Adjust Burst Amp. Transformer	T703	Adjust T703 for minimum D.C. volts at TP702. (Core at bottom).
3	Adjust Trimmer Capacitor	C725	Observe the picture tube and adjust C725 for zero beat. (Colors stand still on screen or drift slowly).
4	Adjust Oscillator Bias Coil	L706	Adjust L706 for -3.0V dc $\pm 0.5V$ at TP702. (Core at bottom)
Repeat step 3. and 4. until zero beat, and -3.0V DC is achieved.			
5	Remove shorts on TP703 and TP701. Color should be in sync.		
6	Adjust ECO coil	T704	Connect VTVM thru 470K resistor to TP704 and adjust T704 for equal DC volts at both extremes of tint control. (Core at bottom position). Slight adjustment of ECO coil may be made to obtain proper tint range.
After completion of demodulator phase adjustment, return the tint control to approximately mid-range (nominal phase position). The 6th bar (R-Y waveform) should be cancelled as shown in Fig. 23.			
DEMODULATOR PHASE CHECKS: (USING COLOR BAR GENERATOR)			
Check the three color outputs at the kinescope grids for proper matrixing. The waveforms and amplitudes should conform to Fig. 24.			
a. Check R-Y waveform at PW700 J701-1			
b. Check G-Y waveform at PW700 J702-5			
c. Check B-Y waveform at PW700 J701-3 (phase should be correct within $\pm\frac{1}{2}$ bar).			
7	Adjust killer threshold	R730B	Adjust with a snowy raster on UHF noise with color control max. Adjust R730B so that color snow just disappears. Check with color signal to assure setting is not killing on color.

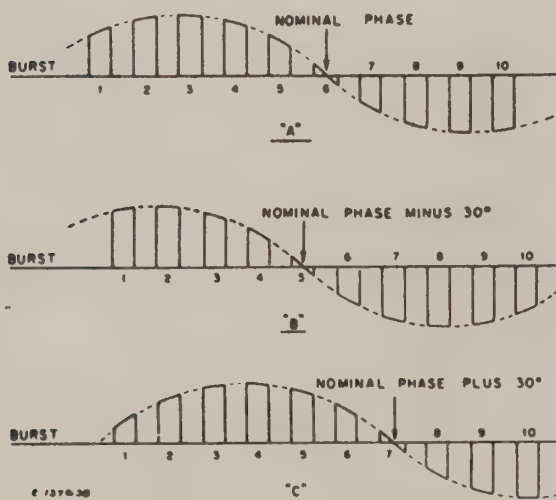


Figure 23 - Waveforms at "R-Y" Output

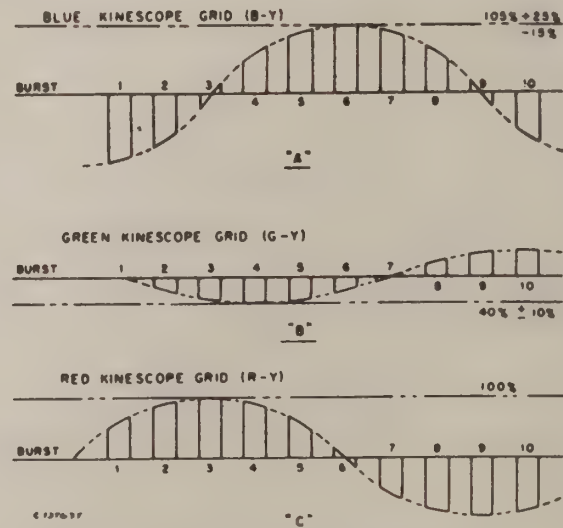


Figure 24 - Waveforms at Picture Tube Grids

SEALED CIRCUIT ASSEMBLIES - PHANTOM VIEWS



Figure 25 - PW300 Pix I-F Sound Board

38A4341-000 (P176) PIX I-F - SOUND BOARD PW300 COMPONENT LOCATION GUIDE

C301 C2	C326 A3	CR301 B3	L311 B4	R319 B5	R341 A2	SG301 B5
C302 C1	C327 A2	DL301 C3	L312 A2	R320 C4	R342 B2	SG302 B5
C303 C1	C328 A2	J301 C5		R321 C4	R343 B3	SG303 B5
C305 B2	C329 A3	J302 A5	Q301 B4	R322 C4	R344 B2	
C306 C2	C330 A4	J303 A2	Q302 B4	R323 C3	R345 A2	T301 C3
C307 C2	C332 A4	J304 C1		R324 C3	R346 A1	T302 A1
C308 B1	C333 A4	J305 C2	R301 C1	R325 C3	R347 A1	T303 A2
C309 C2	C334 A4	J306 B3	R302 C1	R326 B4	R348 C1	T304 A3
C311 B3	C335 B4	J307 B5	R303 C2	R327 A4	R349 A1	T305 A4
C312 C3	C336 C3	J308 B5	R304 B1	R328 A5	R350 A2	T306 C4
C314 B4	C337 C4	J309 B5	R306 B1	R329 B4	R351 A2	
C315 A3	C338 C3		R307 B2	R330 B5	R352 A1	TP301 A4
C316 A3	C339 B4	L301 B2	R308 C2	R331 A5	R353 A1	TP302 A1
C317 B1	C340 B3	L302 B3	R310 B2	R332 A5	R354 B1	
C318 A1	C341 A2	L303 A4	A311 B3	R333 B4	R355 B2	
C319 A1	C342 A3	L304 B3	R312 B3	R334 A4	R356 C4	V301 C1
C320 A1	C343 A3	L305 A1	R313 C4	R335 A4	R357 C3	V302 C2
C321 A1	C344 B2	L306 A4	A314 C4	R336 A3	R358 B4	V303 B3
C322 B2	C345 B1	L307 A4	R315 B5	R337 B4		V304 A1
C323 A1	C346 B2	L308 B4	R316A A5	R338 B4	S301 C5	V305 A2
C324 A2	C347 B4	L309 C3	R316B B5	R339 A3		V306 A3
C325 A2		L310 C3	R318 B5	R340 A3	SD301 B5	V307 C4

SEALED CIRCUIT ASSEMBLIES - PHANTOM VIEWS

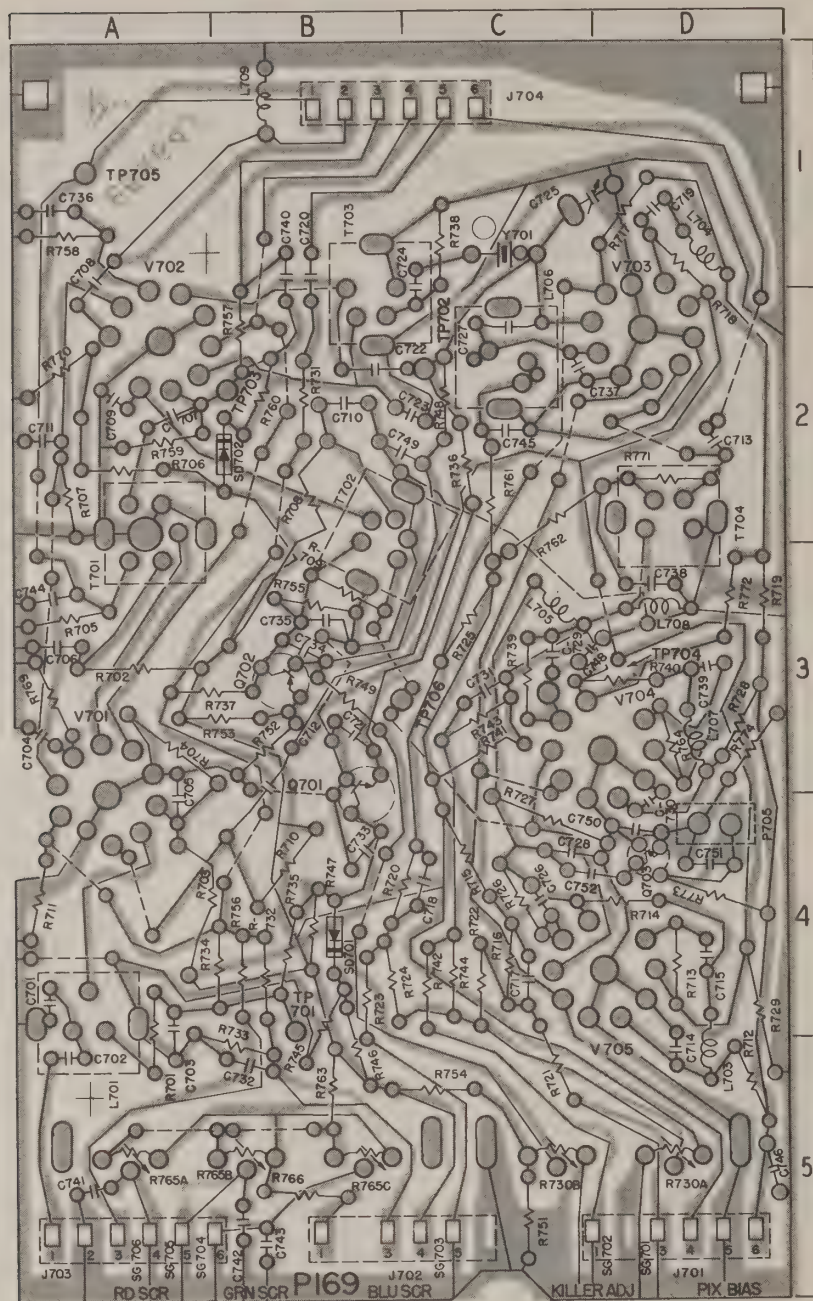


Figure 26 - PW700 Chroma Board

38A4293-000 (P169) CHROMA BOARD PW700 COMPONENT LOCATION GUIDE

C701	A4	C723	C2	C744	A3	P705	D4	R718	D1	R738	C1	R760	B2	SG703	C5
C702	A4	C724	C1	C745	C2	Q701	B3	R719	D3	R739	C3	R761	C2	SG704	A5
C703	A4	C725	C1	C746	D5	Q702	B3	R720	B4	R740	D3	R762	C2	SG705	A5
C704	A3	C726	C4	C747	C4	Q703	D4	R721	C5	R741	C3	R763	B5	SG706	A5
C705	A3	C727	C2	C748	C3	R701	A4	R722	C4	R742	C4	R764	D3	T701	A3
C706	A3	C728	C4	C749	B2	R702	A3	R723	B4	R743	C3	R765A	A5	T702	B2
C707	A2	C729	C3	C750	D4	R703	A4	R724	B4	R744	C4	R765B	B5	T703	B1
C708	A1	C730	D4	C751	D4	R704	A3	R725	C3	R745	B4	R765C	B5	T704	D2
C709	A2	C731	C3	C752	C4	R705	A3	R726	C4	R746	B4	R766	B5	TP701	B4
C710	B2	C732	B5	J701	D5	R706	A2	R727	C4	R747	B4	R769	A3	TP702	C2
C711	A2	C733	B4	J702	B5	R707	A2	R728	D3	R748	C2	R770	A2	TP703	B2
C712	B3	C734	B3	J703	A5	R708	B2	R729	D4	R749	B3	R771	D2	TP704	D3
C713	D2	C735	B3	J704	C1	R709	B3	R730A	D5	R751	C5	R772	D3	TP705	A1
C714	D4	C736	A1	L701	A5	R710	B4	R730B	C5	R752	B3	R773	D4	TP706	C3
C715	D4	C737	C2	L703	D5	R711	A4	R731	B2	R753	B3	R774	D3	V701	A3
C717	C4	C738	D3	L704	D1	R712	D5	R732	B4	R754	C5	SD701	B4	V702	A1
C718	C4	C739	D3	L705	C3	R713	D4	R733	B4	R755	B3	SD702	B2	V703	D1
C719	D1	C740	B1	L706	C2	R714	D4	R734	B4	R756	B4	V704	D3	V705	D4
C720	B1	C741	A5	L707	D3	R715	C4	R735	B4	R757	B2	SG701	D5	Y701	C1
C721	B3	C742	B5	L708	D3	R716	C4	R736	C2	R758	A1	SG702	D5		
C722	B2	C743	B5	L709	B1	R717	D1	R737	B3	R759	A2				

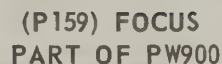
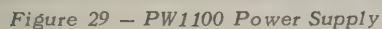


Figure 28 — Focus

NOTE: Symbols P901, J901, P902 & J902 appear on both the P159 focus board and the P157 H.V. board assys. and schematic.



38A4184-000 (P161) AUTO-FINE TUNING PW1400 COMPONENT LOCATION GUIDE

C1401 A2	C1408 B2	L1401 A2	R1402 A1
C1402 A1	C1409 B2	L1402 B1	R1403 A2
C1403 A1	C1410 B1	L1403 B2	R1404 B2
C1404 B2	C1411 B1		R1405 B2
C1405 B1		Q1401 A2	R1406 B1
C1406 B2	D1401 B1		R1407 A2
C1407 B2	D1402 B2	R1401 A1	R1408 B1

SEALED CIRCUIT ASSEMBLIES

38A4342-000 (P177) DEFLECTION PW500 COMPONENT LOCATION GUIDE

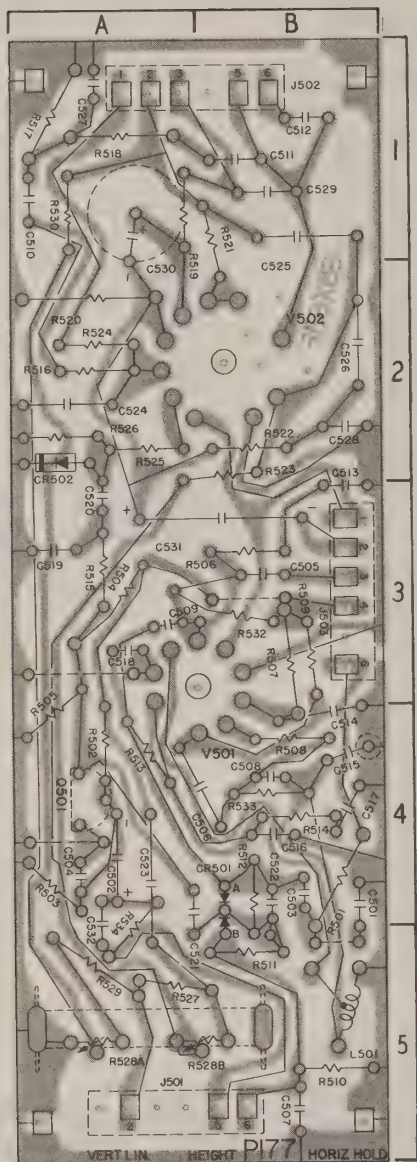


Figure 31 – PW500 Deflection

C501 B4	L501 B5
C502 A4	
C503 B4	Q501 A4
C504 A4	
C505 B3	R501 B4
C506 B4	R502 A4
C507 B5	R503 A4
C508 B4	R504 A3
C509 A3	R505 A4
C510 A1	R506 B3
C511 B1	R507 B3
C512 B1	R508 B4
C513 B3	R509 B3
C514 B4	R510 B5
C515 B4	R511 B5
C516 B4	R512 B4
C517 B4	R513 A4
C518 A3	R514 B4
C519 A3	R515 A3
C520 A3	R516 A2
C521 A4	R517 A1
C522 B4	R518 A1
C523 A4	R519 A1
C524 A2	R520 A2
C525 B1	R521 B1
C526 B2	R522 B2
C527 A1	R523 B2
C528 B2	R524 A2
C529 B1	R525 A2
C530 A1	R526 A2
C531 B3	R527 A5
C532 A5	R528 A,B . . A5
CR501 . . . B4	R529 A5
CR502 . . . A2	R530 A1
	R532 B3
J501 A5	R533 B4
J502 B1	R534 A5
J503 B3	V501 B4
	V502 B2

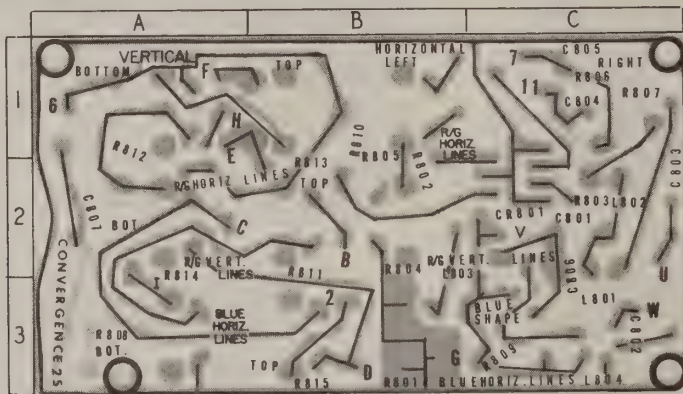
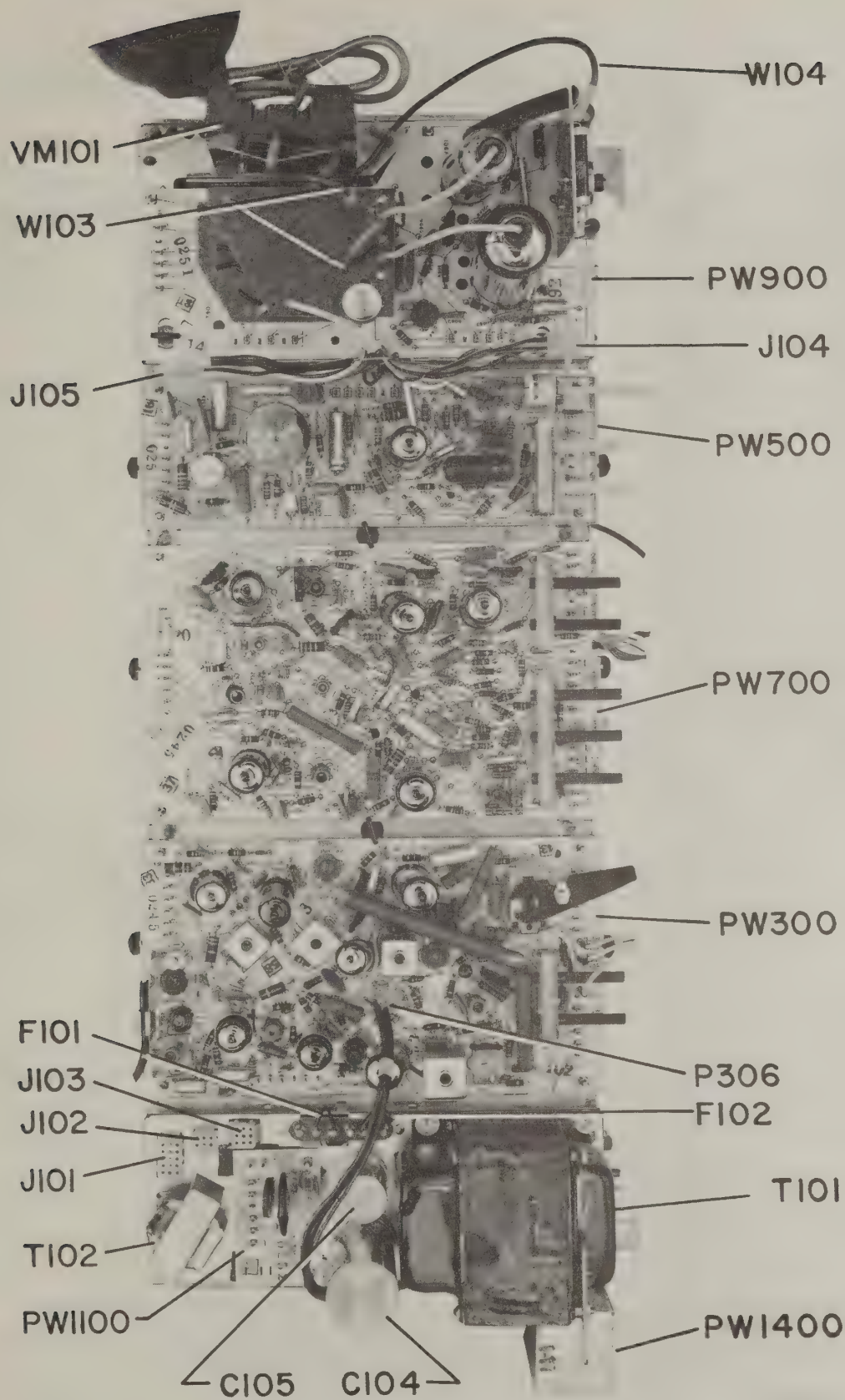


Figure 32 – PW800 Convergence

38A4131-000 (P160) CONVERGENCE PW800 COMPONENT LOCATION GUIDE

C801 C2	CR801 . . . C2	R802 B2	R809 C3
C802 C3		R803 C2	R810 B1
C803 C2	L801 C3	R804 B2	R811 B2
C804 C1	L802 C2	R805 B1	R812 A1
C805 C1	L803 B2	R806 C1	R813 B2
C806 C2	L804 C3	R807 C1	R814 A2
C807 A2	R801 B3	R808 A3	R815 B3



5174

Figure 33 - Top Chassis Component Location Guide

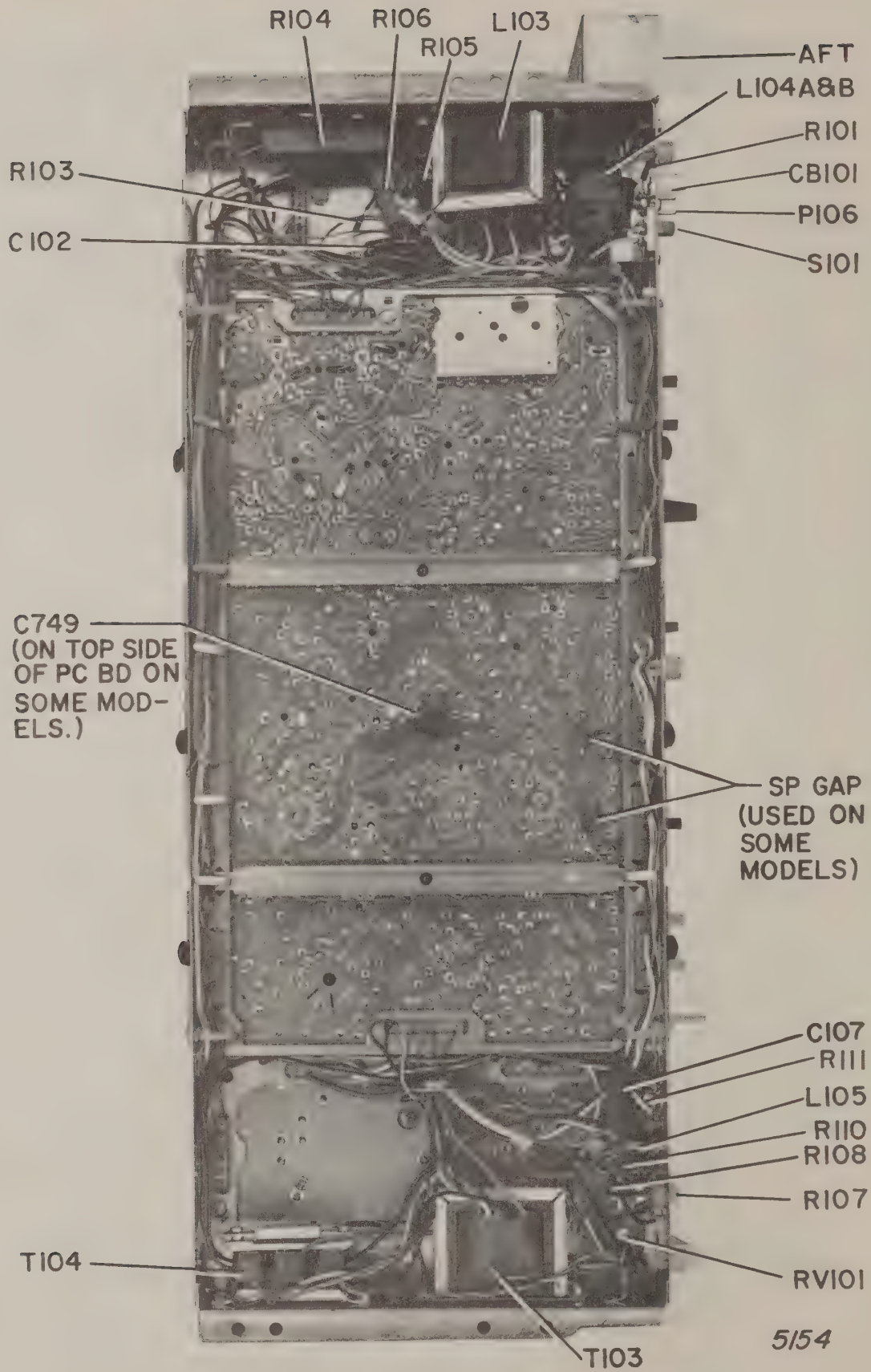
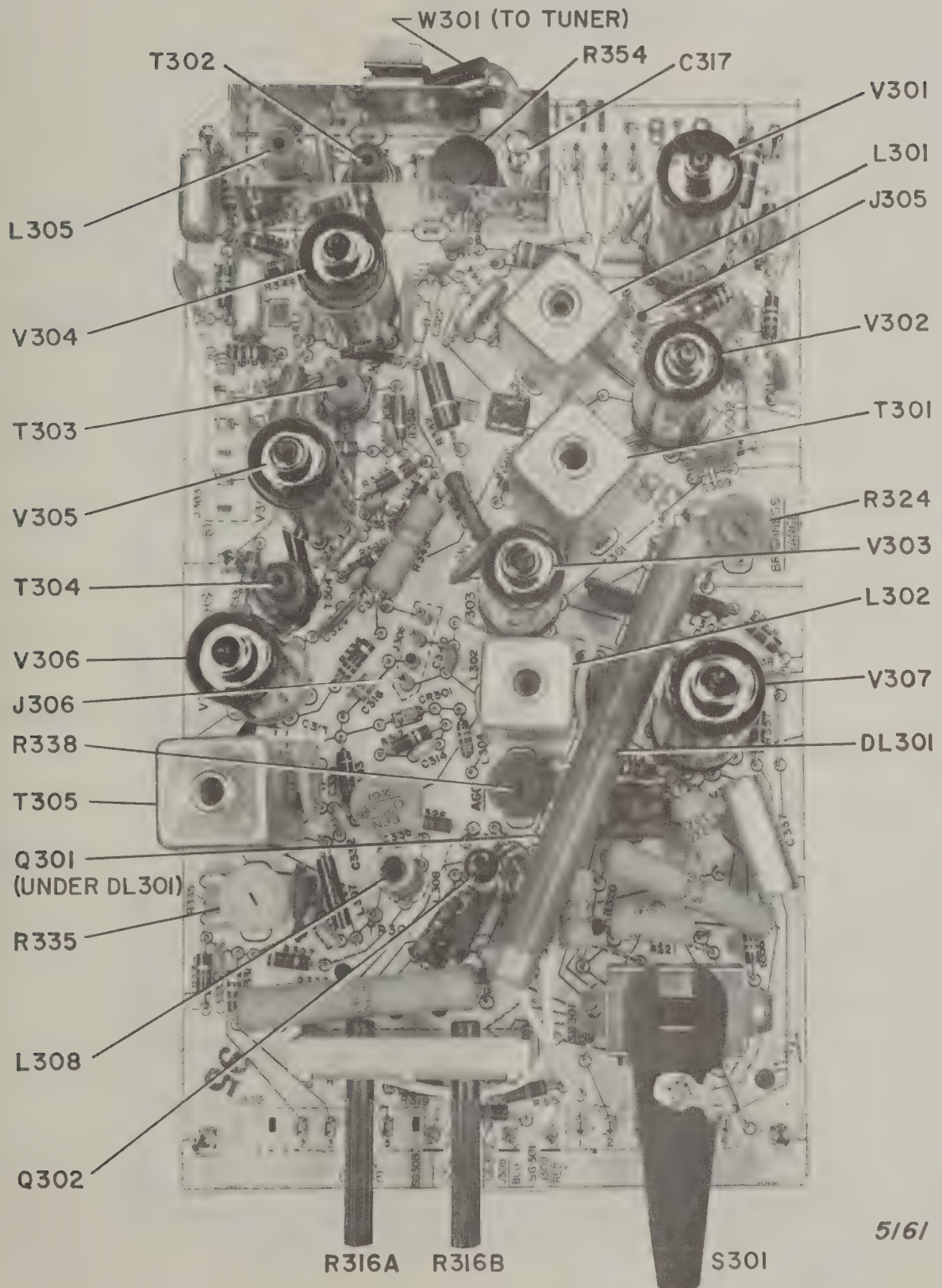


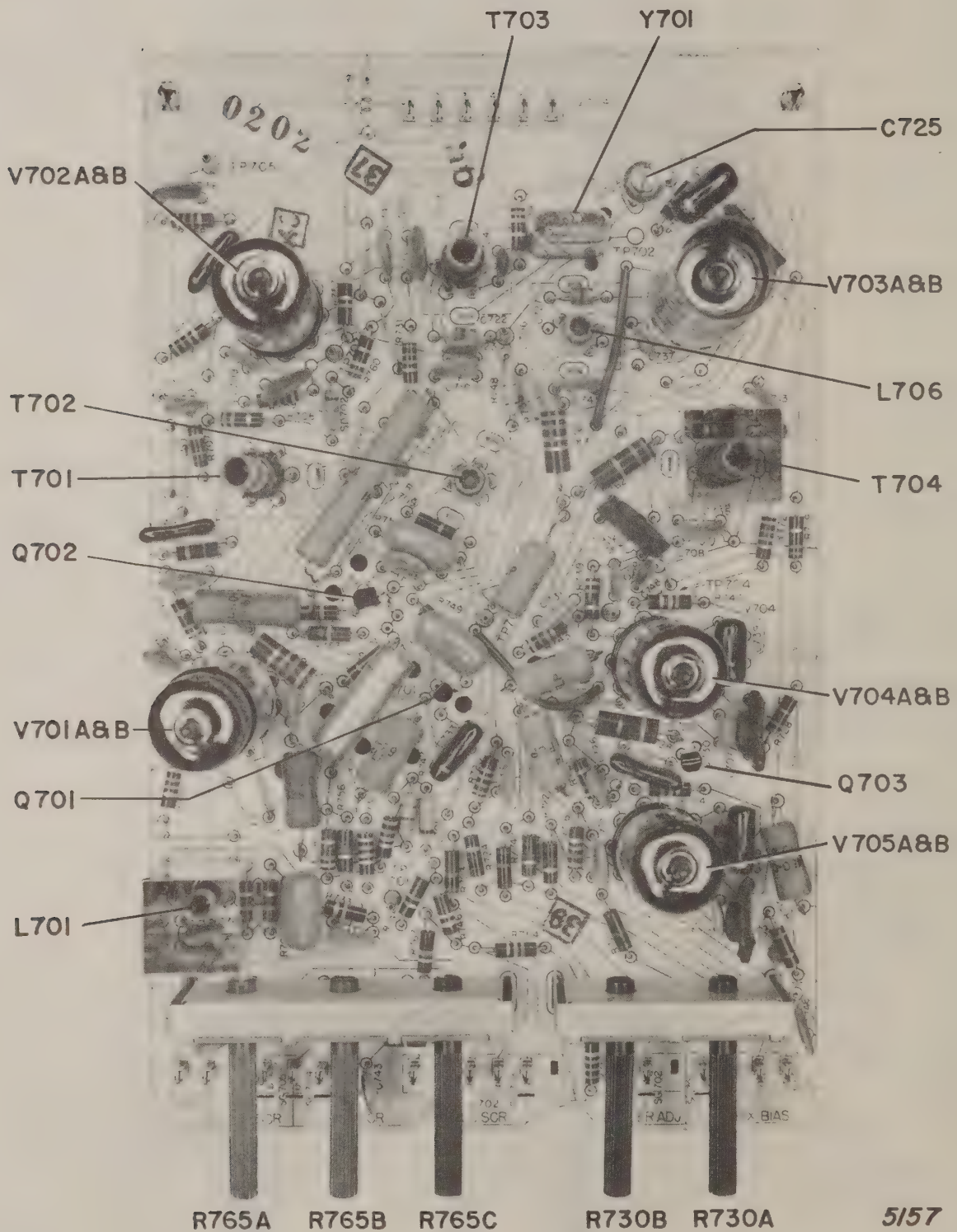
Figure 34 - Bottom Chassis Component Location Guide

PW300 BOARD PICTORIAL
38A4341-000 (P176) PIX I-F & SOUND

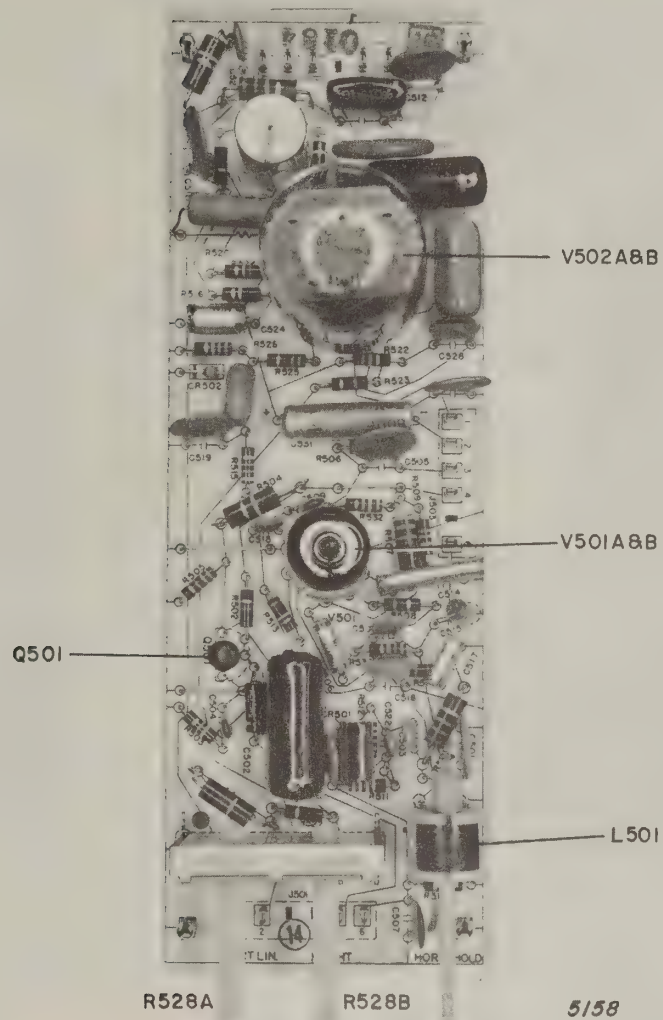


5161

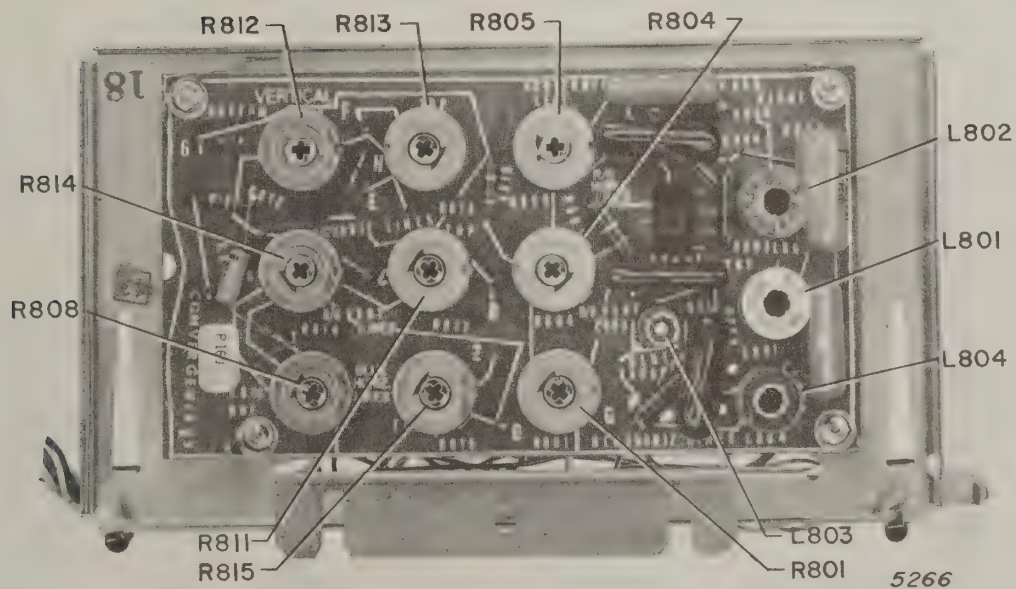
PW700 BOARD PICTORIAL
38A4293-000 (P169) CHROMA



PW500 BOARD PICTORIAL
38A4342-000 (P177) DEFLECTION

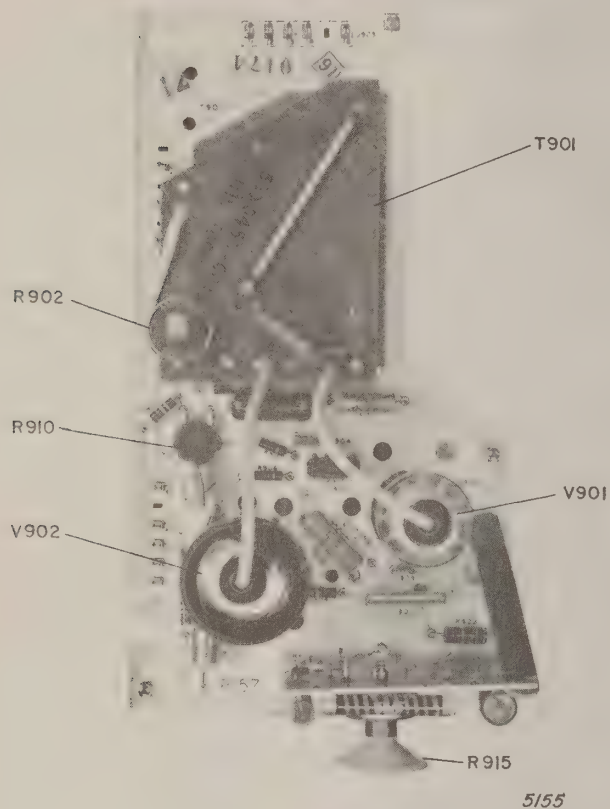


PW 800 BOARD PICTORIAL
38A4131-000 (P160) CONVERGENCE

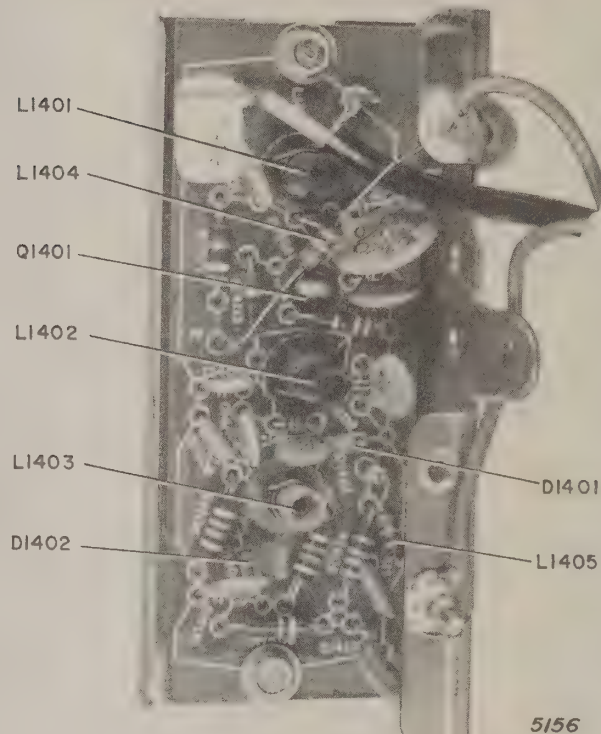


PICTORIALS

PW 900 BOARD
38A4128-000 (P157) HIGH VOLTAGE
INCLUDING (P159) FOCUS BOARD

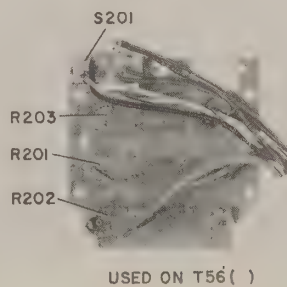
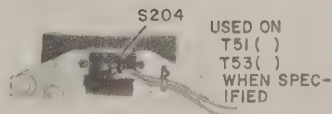
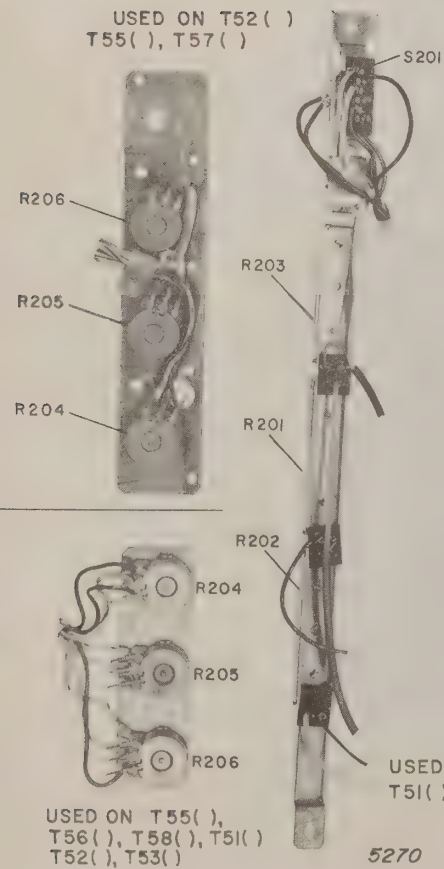


PW 1400 BOARD
38A4184-000 (P161) AUTO. FINE TUN.

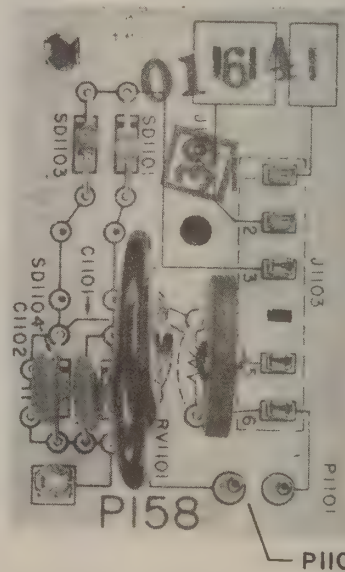


AUXILIARY & SECONDARY CONTROLS

USED ON T52()
T55(), T57()



PW 1100 BOARD
38A4129-000 (P158)
POWER SUPPLY



VHF TUNER PARTS LIST

All VHF parts are identical except fine tuning shaft and shaft and coil assemblies. See breakdown below

WGEC-25A1282-001 – STANDARD KOLLSMAN NO. SBRCA-324

WGEC-25A1282-002 – STANDARD KOLLSMAN NO. SBRCA-318

WGEC-25A1282-003 – STANDARD KOLLSMAN NO. SBRCA-331

RESISTORS

Ref. No.	Std. Kolls. Part No.	Ohms	Watts	Tolerance
R-207	12SAE562M	5.6K	1.0	20%
R-208	12WAE392K	3.9K	0.5	10%
R-209	12TAE3R9K	3.9	0.5	10%
R-210	12TAE471M	470	0.5	20%
R-211	12TAE473M	47K	0.5	20%
R-212	12TAE224M	220K	0.5	20%
R-213	12TAE102M	1K	0.5	20%
R-214	12SAE472M	4.7K	1.0	20%
R-215	12WAE473M	47K	0.25	20%
R-216	12WAE471K	470	0.25	10%
R-217	12TAE155K	1.5M	0.5	10%
R-218	12TAE473K	47K	0.5	10%
*R-219 }	340X3273-810	27K	0.5	10%
*R-220 }				
R-221	12TAE475K	4.7 Meg	0.5	10%

CAPACITORS

Ref. No.	Std. Kolls. Part No.	Capacity	Tolerance
C-202	13L6GP150J	15 pf	±5%
C-203	13M-063	47 pf	±10%
C-204 }	31B-902-023	0.5-4.5pf	Trimmer
C-205 }			
C-211 }	13D-111-041	0.33 pf	±10%
C-206 }			
C-207	13M-105-()	15 pf	±5%
C-208	13L-211-007	1.2 pf	±10%
C-209	13L6UJ6R8C	6.8 pf	N750
C-210	13L6TH8R2C	8.2 pf	N470
C-212 }	13M-035-()	1K pf	GMV
C-213 }			
C-214 }	13L6X102Z	1K pf	10 V N.P.
C-216 }			
C-217 }	45X0534-001	5 pf	Electrolytic
C-218 }			
C-219 }	13P-012-()Quad	27 pf	±7.5%
C-225 }			
C-221 }	13P-012-()Quad	27 pf	±7.5%
C-222 }			
C-223 }	13P-012-()Quad	27 pf	±7.5%
C-224 }			

*W.G.E.C. Part Nos.

TRANSFORMERS & COILS

Ref. No.	Std. Kolls. Part No.	Description
L-201 }	Part of Ch. #1 UHF Stick	
L-202 }		
L-203 }	VHF Coil Board (Channels 2 thru 13) Assembly	
L-204 }		
L-205 }	34A-1150-022	Choke
L-206 }		
L-207 }	31U-648-001	I-F Coil
L-209 }		
L-211	25A-249-018	Screen Coil
L-212	25A-255-007	Tap Coil
L-213 }	Part of T201	
L-214 }		
L-215 }	31T-3251-092	Filament Wire
L-216 }		
L-217	31T-4460-010	Ant. Input Assembly
T-201		

DIODES

Ref. No.	Std. Kolls. Part No.	Description
D-201	24E-001-()	Diode, Varactor

MISCELLANEOUS

Item No.	Std. Kolls. Part No.	Description
1	6HA5	Tube, R-F Amp.
2	16S-059	Tube, Shield (6HA5)
3	6GJ7	Tube, R-F Oscillator & Mixer
4	16S-055-002	Tube Shield (6GJ7)
	16S-060-001	
5	31U-648-001	I-F Coil Assembly
6	31B-206-016	Trimmer Assembly (2 used)
7	9YS436-10PC-S-7	Screw, Trimmer
8	10E-408	Nut, Trimmer
9	31B-902-023	Dowel, Trimmer, .5-4.5pf (2 used)
10	9B-810	Screw, Mounting
11	23A-362-001	Detent Spring
12	27E-111	Detent Ball
13	23A-284-003	Drum Retaining Spring
14	11R-019	Limiter Ring
15	23A-308-001	Spring, Slide Return
16	31T-4855-005	Preset Slide Assembly
17	19B-284	Pinion, Driver
18	19B-310-002	Slide, Preset
19	19B-206-001	Gear, Driven
20	19B-205	Idler Gear
21	31T-4508-606	Clutch Assembly
22	19B-217-001	Drive Gear
23	23A-360	Spring, Clutch
24	16Z-022-001	Ring, Clutch
25	11G-090	Washer, Tongue
26	15S-194-149	Shaft, Fine Tuning, Alum. (25A1282-002 Tuner)
26	15S-194-230	Shaft, Fine Tuning, Alum. (25A1282-001 Tuner)
26	15S-194-231	Shaft, Fine Tuning, Alum. (25A1282-003 Tuner)
27	11R-022	Retaining Ring
29	31T-4724-193	Shaft & Coil 25A1282-001 Supp. Assy. Tuner
29	31T-4725-127	Shaft & Coil 25A1282-002 Supp. Assy. Tuner
29	31T-4724-199	Shaft & Coil 25A1282-003 Supp. Assy. Tuner
30	14K-749	Bottom Cover
31	9W-507	Slug, Tuning
32	31M-2AH	Channel Coil Assembly
thru	thru	
43	31M-13AH	Channel 2 thru 13
44	31T-4730-N049	#1 Strip Assembly
45	31T-4720-139	Stator Assembly
46	19B-258-002	Lock, Pin
47	{ 23A-323 (8) 23A-344-001 (1) 23A-344-002 (2)	Stator Contact
48	23A-324-001	Ground Spring
49	31T-4460-010	Antenna Input Ass'y.
*	14K-613-005-6	Clip Slug, Tuning (31)
*		Not shown on Pictorial

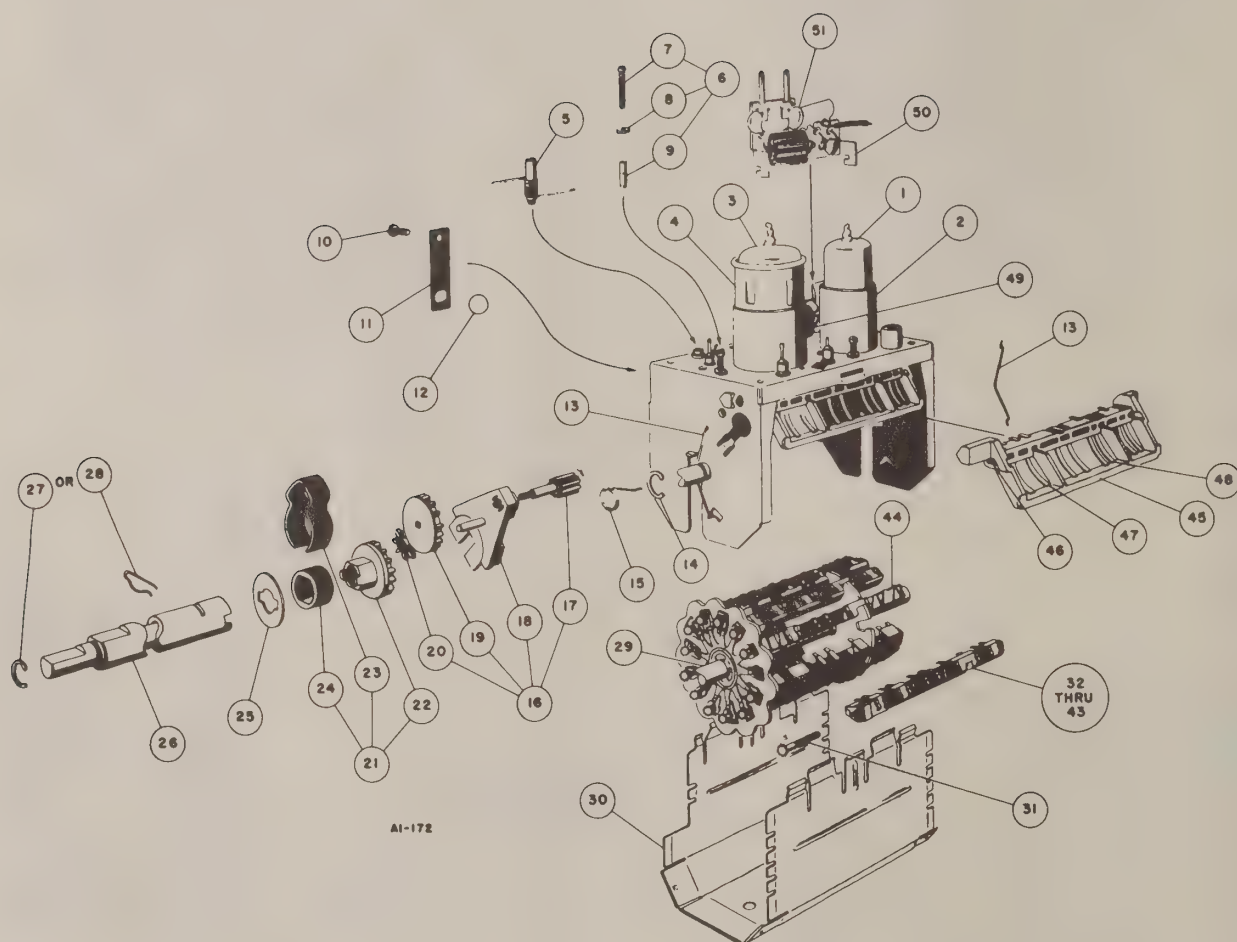
VHF TUNER PARTS LIST

All VHF parts are identical except fine tuning shaft and shaft and coil assemblies. See breakdown below

WGEC-25A1282-001 - STANDARD KOLLSMAN NO. SBRCA-324

WGEC-25A1282-002 - STANDARD KOLLSMAN NO. SBRCA-318

WGEC-25A1282-003 - STANDARD KOLLSMAN NO. SBRCA-331



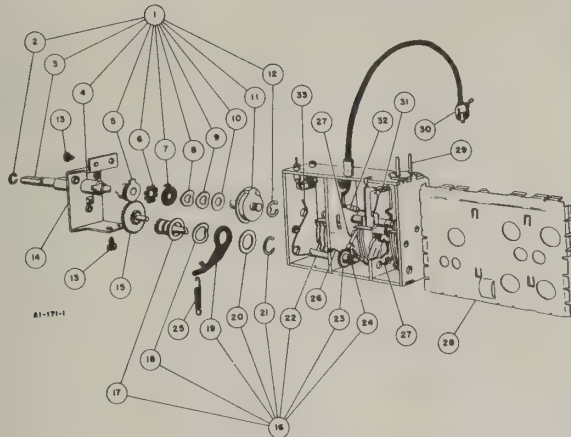
UHF TUNER PARTS LIST

All UHF parts are identical except for drive assemblies. See breakdown below.

WGEC-25A1275-001 – STANDARD KOLLSMAN NO. AUTA-063

WGEC-25A1275-002 – STANDARD KOLLSMAN NO. AUTA-091

WGEC-25A1275-003 – STANDARD KOLLSMAN NO. AUTA-095



RESISTORS

Ref. No.	Std. Kolls. Part No.	Ohms	Watts	Tolerance
R222	12TAE102K	1 K	0.5	±10% . . .
R223	12TAE392K	3.9 K	0.5	±10% . . .
R224	12WAE472K	4.7 K	0.25	±10% . . .
R225	12WAE183K	18 K	0.25	±10% . . .
*R226	340X3105-810	1 Meg	0.5	±10% . . .
R227	12WAE393K	39 K	0.25	±10% . . .
R228	12WAE105K	1 Meg	0.25	±10% . . .
R229	12TAE684M	680 K	0.5	±20% . . .

*WGEC Part No.

CAPACITORS

C226	13M-106-()	220pf	±20%
C227	31B-902-017	2-8pf	Trimmer
C228	13M-035	1Kpf	GMV
C231			
C235			
C229	13M-102-()	1Kpf	
C230	13M-058-()	30pf	
C232	13X0009	0.5mf	N750
C233	13R-065	2.3pf	
C234A	Part of Gang Tuning		
C234B			
C234C			
*C237	80X0099-095	.001mf	

*WGEC Part No. and used on tuners with chassis stamped T511, T512, T531 & T532 ONLY.

COILS

L218	34A-1150-023	Coil
L219	25A-269	Coil, Input Loop
L220	31K-137-051	Coil, Preform Choke

SEMI-CONDUCTORS

Ref. No.	Std. Kolls. Part No.	Description
D202	24E-005-()	Diode
D203	24E-002-()	Diode
Q201	24T-016-(016)	Transistor

MISCELLANEOUS

Item No.	Std. Kolls. Part No.	Description
1	31T-4696-063	Drive Assembly (25A1275-001 Tuner)
1	31T-4696-091	Drive Assembly (25A1275-002 Tuner)
1	31T-4696-095	Drive Assembly (25A1275-003 Tuner)
2	11R-022	Retaining Ring
3	15S-249-022	Drive Shaft (25A1275-001 Tuner)
3	15S-249-047	Drive Shaft (25A1275-002-Tuner)
3	15S-249-049	Drive Shaft (25A1275-003 Tuner)
4	15S-245-039	Indicator Shaft (25A1275-002 Tuner)
4	15S-245-041	Indicator Shaft (25A1275-003 Tuner)
5	19B-279-005	Drive Gear/Shaft (25A1275-001 Tuner)
5	19B-244-001	Drive Gear (25A1275-002 & -003 Tuner).
6	14K-698-001	Ratchet Washer
7	14K-710-001	Drive Disc
8	11P-024	Bowed Washer
9	11P-024	Bowed Washer
10	11G-096	Flat Washer
11	19B-245	Cam
12	11R-029	"E" Ring
13	9B-802	Screw Bracket Mtg.
14	14K-725-003	Bracket Drive Mtg.
15	19B-248-001	Gear Idler
16	31T-4697-001	Jack Shaft Assembly
17	11G-100-001	Flat Washer
18	11P-021	Bowed Washer
19	14J-090-001	Cam Follower
20	11G-100-001	Flat Washer
21	11R-020	"C" Ring
22	19B-247	Jack Shaft
23	19B-246-003	Pinion
24	23B-001-001	Ring Compression
25	23A-340	Spring, Arm Follow
27	23A-346 (2)	Spring Bias, Rotor
28	14K-724-001	Cover
29	31T-4671-003	Antenna Input Assembly
30	31T-3134-131	Cable Assembly (25A1275-001 Tuner)
30	31T-3134-142	Cable Assembly (25A1275-002 & -003 Tuner).
31	9P-031	Mix Loop Pin
32	31T-4699-003	Diode Sleeve Assembly (25A1275-001 Tuner)
32	31T-4699-002	Diode Sleeve Assembly (25A1275-002-003 Tuner)
33	23A-339-001	Spring, Fine Tuning Shaft

VHF TUNER PARTS LIST

All VHF parts are identical except for fine tuning shaft and shaft assemblies. See breakdown below.

WGEC-25A1283-001 - SARKES TARZIAN NO. 751-518

WGEC-25A1283-002 - SARKES TARZIAN NO. 751-521

WGEC-25A1283-003 - SARKES TARZIAN NO. 751-522

RESISTORS

Ref. No.	Sarkes-Tarzian Part No.	Ohms	Watts	Tolerance
R209	109-562	5.6K	0.5	±20%
R210	111-102	1.0K	0.5	±20%
R211	114-471	470	0.5	±20%
R212	111-473	47K	0.5	±20%
R213	111-472	4.7K	0.5	±20%
R214	111-562	5.6K	0.5	±20%
R215	111-223	22K	0.5	±20%
R216	111-473	47K	0.5	±20%
R217	111-102	1.0K	0.5	±20%
R218	111-224	220K	0.5	±20%
*R219 } *R220 }	340X3273-810	27K	0.5	±10%
R221	111-334	330K	0.5	±20%
*R222	340X4103-810	10K	1.0	±10%
R223	111-103	10K	0.5	±20%
R224	111-105	1.0 Meg	0.5	±20%

CAPACITORS

Ref. No.	Sarkes-Tarzian Part No.	Description
C201	235-779	7.7pf
C202	3176-279	2.7pf
C203 } C207 }	2033-27	1Kpf
C204	165-829	8.2pf
C205	3176-109	1.0pf
C206	227-829	8.2pf
C208	228-159	1.5pf
C209 } C211 } C213 } C214 } C215 } C216 }	335-1	1Kpf
C210	336-470	47pf
C212	1107-150	15pf
C217	1183-1	1Kpf
C218	214-1	1Kpf
*C220	45X0534-001	5pf 10V N.P. Electrolytic
C221 } C222 }	Part of T201	

*W.G.E.C. Part Nos.

TRANSFORMERS AND COILS

Ref. No.	Sarkes-Tarzian Part Nos.	Description
L201 } L202 } L203 } L204 } L205 }	Part of Chan.#1	UHF Stick
L206 } L207 } L208 }	Wound Channel Stick Assy. Ch. 2 thru Ch. 13	
L209	1165-11	Coil, Input
L214	372-3	Coil
L215 } L216 } L217 }		
L218 } L219 } L220 }	Part of T201	Antenna Trap Assy.
L221 } L222 } L223 }	4467-12	Coil, I-F
T201	4283-543	Antenna Trap Assy.

TRANSISTOR

Q201	7-29	Transistor
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MISCELLANEOUS

Item No.	Sarkes-Tarzian Part No.	Description
1	4283-543	Antenna Trap Assembly
2	4996-501	Balun Coil (Part of 4283-543)

MISCELLANEOUS (Con't.)

Item No.	Sarkes-Tarzian Part No.	Description
3	3140-3	RF Tube Shield
4		IF Test Point
5	4365-503	Mixer Tube Socket & Shield Assembly
6	2178-2	IF Output Phono Jack
7	4467-519	IF Coil
8		Mixer B+ Terminal
9	3747-2	Spring
10	3888-3	Plate
11	4009-1	Clip Retainer
12	4346-2	Yoke Stop
13	3737-4	Gear Shaft
14	1611-71	Washer
15	4503-4	Lever
16	2178-2	Phono Jack
17		Dummy Lug
18	4415-505	Stator Assembly
19		RF Test Point
20		UHF B+
21	4486-1	Tuning Screw Stop
22	3530-10	Detent Spring
23		U-V Cable
24	3738-4	Gear Drive
25	3563-210	Fine Tuning Shaft (25A1283-001)
25	3563-162	Fine Tuning Shaft (25A1283-002)
25	3563-211	Fine Tuning Shaft (25A1283-003)
26	3736-1	Clip Clutch
27		Channel Sticks (See Listing Wound Channel Sticks)
28	3745-8	Gear Screw
29	3784-696	Shaft Assembly (less sticks) (25A1283-001)
29	3784-628	Shaft Assembly (less sticks) (25A1283-002)
29	3784-700	Shaft Assembly (less sticks) (25A1283-003)
30	1864-1	Retainer
31	3316-3	Cover
32		AFC Terminal
51		AFC Back Bias Terminal
52		AFC Terminal
53		B+ Terminal
54	2178-2	Phono Jack
55		Antenna Input Assembly (Order Separately)
a. 5215-4		Contact Pins (2)
b. 4514-3		Input Loop, Wire
c. 4513-2		Input Case, Plastic
d. 111-185		Resistor 1.8 megohms
56	4798-4	Cover
57	4836-1	Spacer
58	4733-4	Bracket
59	2028-7	Screw (2)
60	4738-504	Clutch Assembly
61	3747-3	Spring
65	4741-533	Hub-Shaft Assembly
66	2465-1	Plate Stop
67	2466-10	Dial Shaft
68	2028-4	Screw (2)
69	4734-12	Bracket

WOUND CHANNEL STICKS

Item 27	Color	Part Number
Ch. #1	Brown	2869-513
Ch. #2	Red	4862-503
Ch. #3	Orange	4863-503
Ch. #4	Yellow	4864-503
Ch. #5	Green	4865-503
Ch. #6	Blue	4866-503
Ch. #7	Violet	4867-503
Ch. #8	Yellow	4868-503
Ch. #9	None	4869-503
Ch. #10	Black	4870-503
Ch. #11	Brown	4871-503
Ch. #12	Red	4872-503
Ch. #13	Orange	4873-503

Note: A few sticks have identical color codes. To identify, all low channel sticks have more windings than the high channel sticks with the same color code.

UHF TUNER PARTS LIST

All UHF parts are identical except for dial shaft and hub shaft assemblies. See breakdown on page 32.

WGE-25A1277-001 – SARKES TARZIAN NO. 474-522

WGE-25A1277-002 – SARKES TARZIAN NO. 472-514

WGE-25S 1277-003 – SARKES TARZIAN NO. 472-516

RESISTORS

Ref. No.	Sarkes-Tarzian Part No.	Ohms	Watts	Tolerance
R225	106-154	150K	0.5	±20%
*R226	340X3154-810	150K	0.5	±10
R227	106-393	39K	0.5	±20%
R228	106-222	2.2K	0.5	±20%
R229	106-221	220	0.5	±10%
R230	106-122	1.2K	0.5	±20%
R231	114-332	3.3K	0.5	±20%
R232	111-185	1.8 Meg	0.5	±20%
R233	106-183	18K	0.5	±10%

*W.G.E.C. Part No.

COILS & CHOKES

Ref. No.	Sarkes-Tarzian Part No.	Description
L224	1164-1	Choke, Preform
L225	1155-12	Coil, I-F Preform
L226	4514-3	Coil, Input Loop

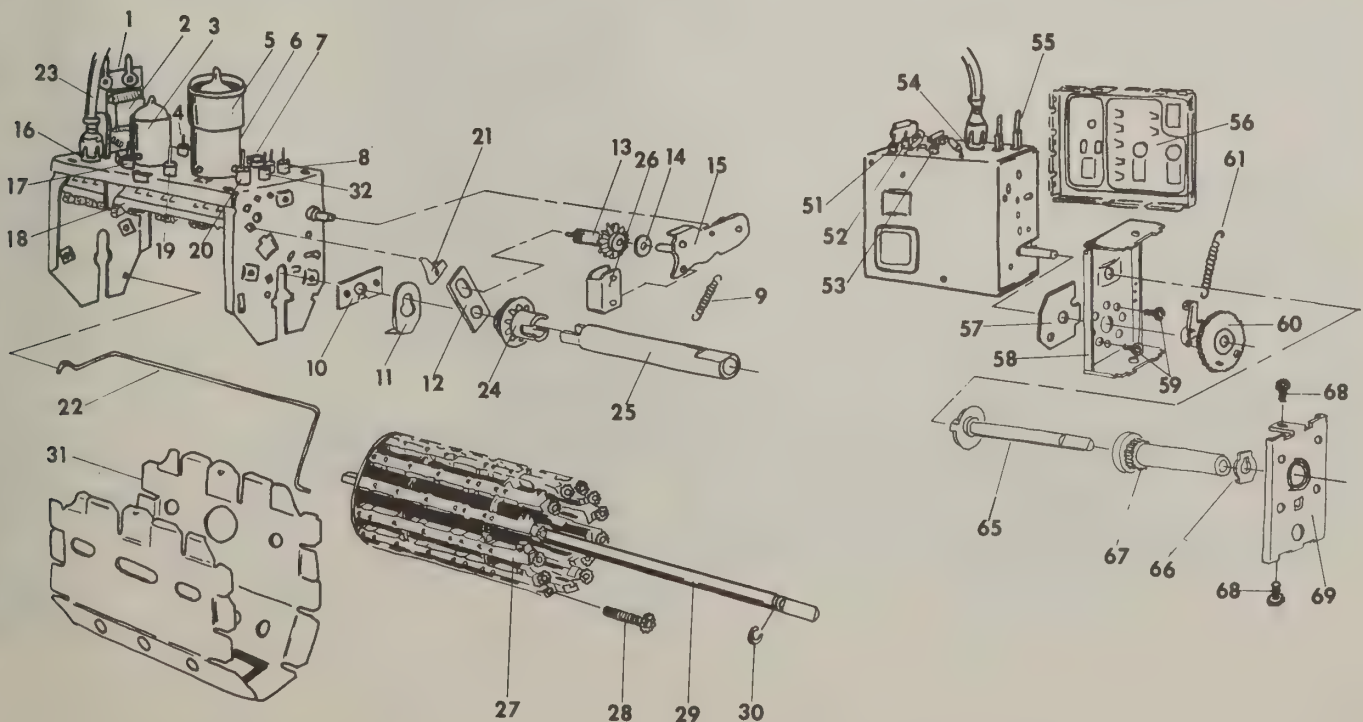
SEMI-CONDUCTORS

D201	1186-1	Diode
D202	47-4	Diode
Q202	7-4	Transistor

CAPACITORS

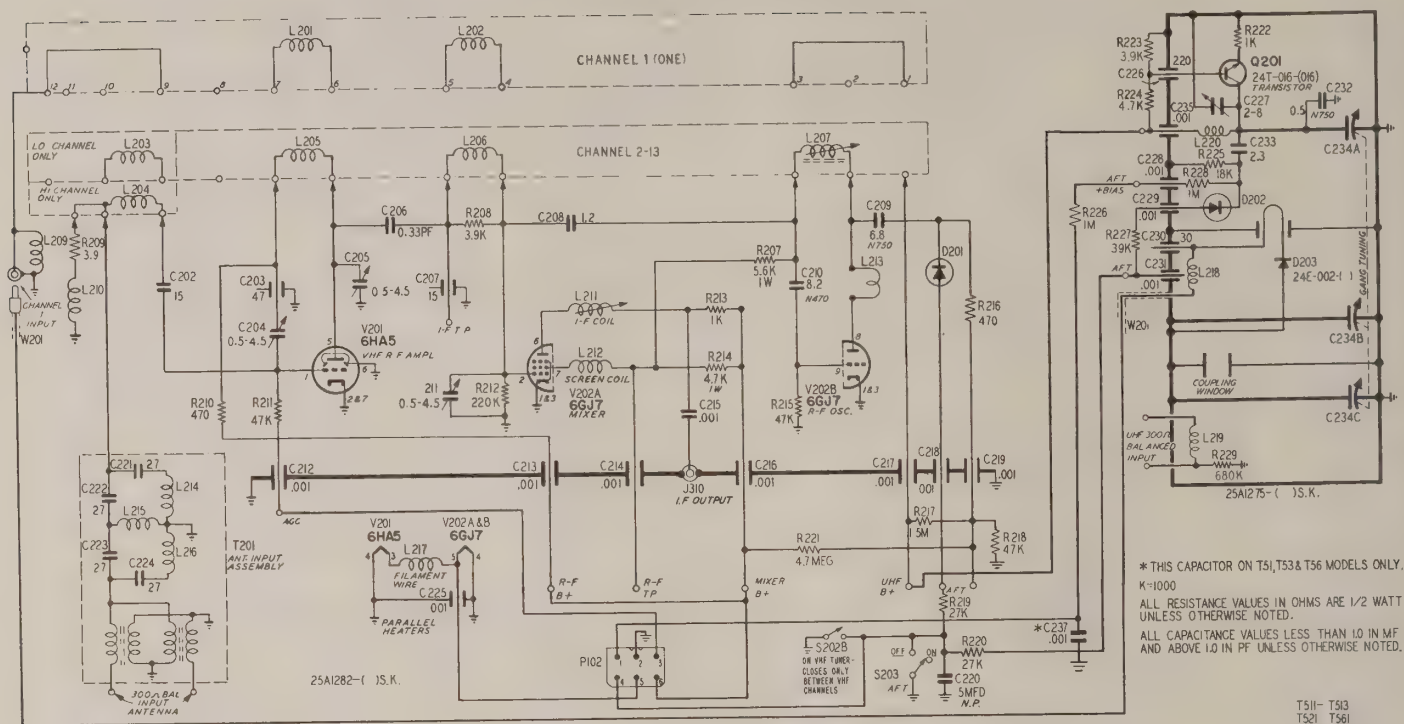
Ref. No.	Sarkes-Tarzian Part No.	Description
C223	1193-300	30pf
C226		
C224	1120-471	470pf
C225	214-1	1Kpf
C227	3176-478	0.47pf
C228	1126-2	4.5pf
C229	Trimmers	
C231		
C232		
C233	1126-3	5.4pf
C230		
C234A	Part of Gang Tuning	
C234B		
C234C		
C235	1149-1	100pf
C236		

SARKES TARZIAN VHF-UHF TUNER PICTORIAL



STANDARD KOLLSMAN TUNERS

(See Parts List For Specific Chassis Stamping)



* THIS CAPACITOR ON T51, T53 & T56 MODELS ONLY.
K=1000

ALL RESISTANCE VALUES IN OHMS ARE 1/2 WATT
UNLESS OTHERWISE NOTED.

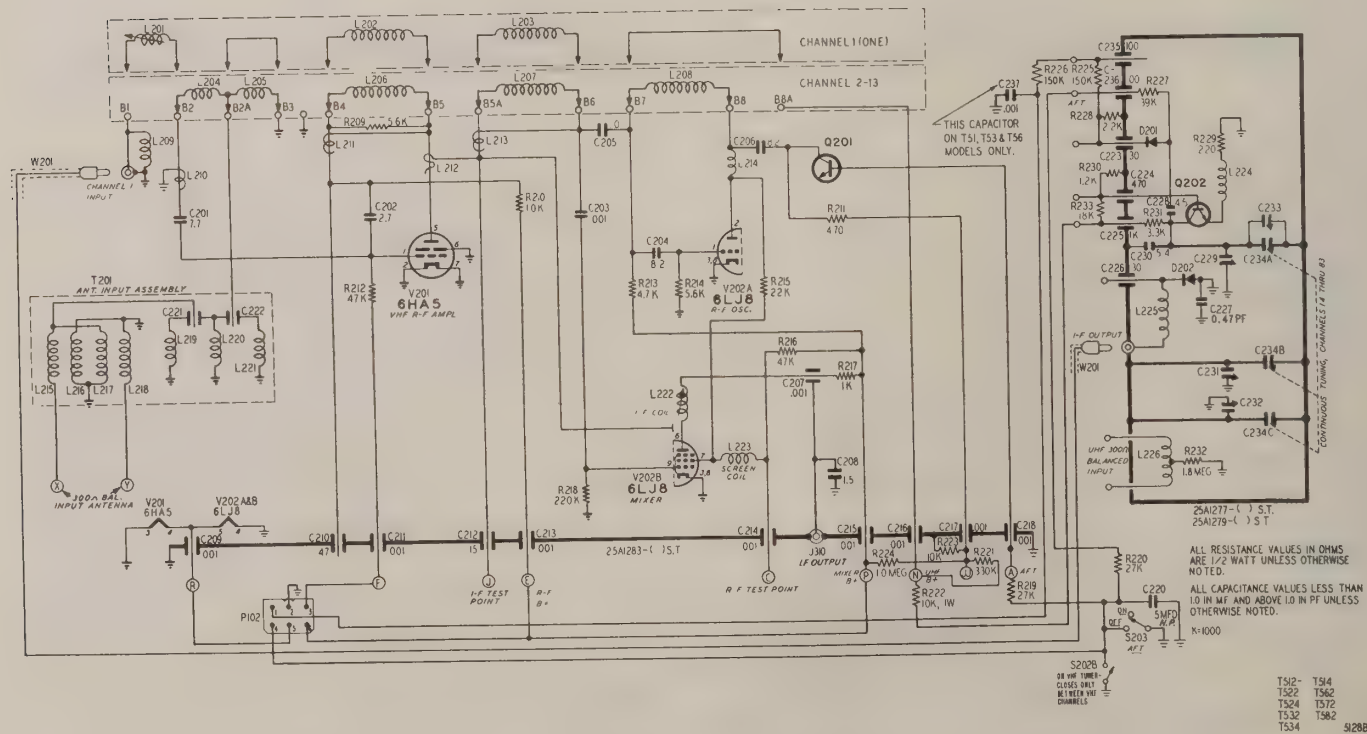
ALL CAPACITANCE VALUES LESS THAN 1.0 IN MF
AND ABOVE 1.0 IN PF UNLESS OTHERWISE NOTED.

T511- T513
T521 T561
T531 T571
T523 T581
T533 5127B

51278

SARKES-TARZIAN TUNERS

(See Parts List For Specific Chassis Stamping)



← THIS CAPACITOR

ALL RESISTANCE VALUES IN OHMS
ARE 1/2 WATT UNLESS OTHERWISE
NOTED

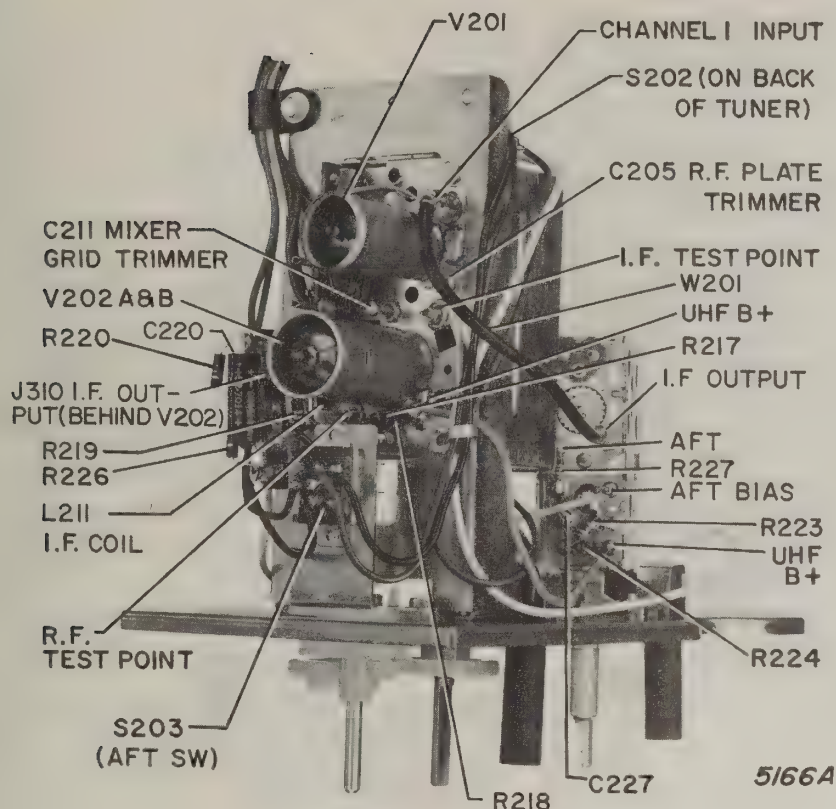
ALL CAPACITANCE VALUES LESS THAN 1.0 IN MF AND ABOVE 1.0 IN PF UNLESS OTHERWISE NOTED.

REF
S203
AFT

T512-	T514
T522	T562
T524	T572
T532	T582
T534	51285

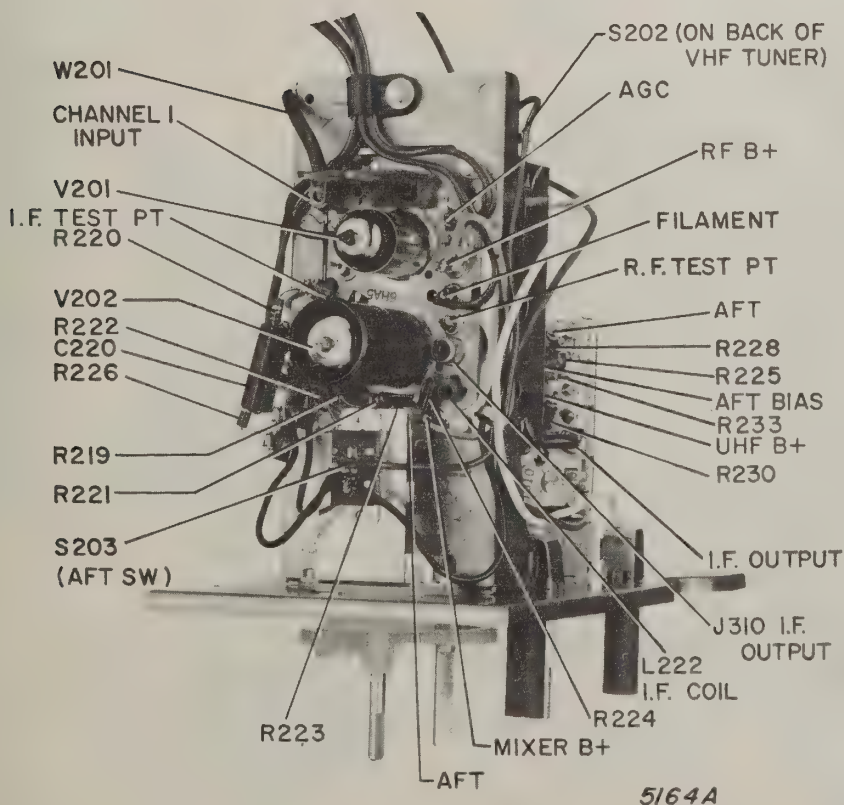
528F

TUNER INFORMATION



25A1282-001
VHF TUNER &
25A1275-002
UHF TUNER
COMPONENTS &
ADJUSTMENTS

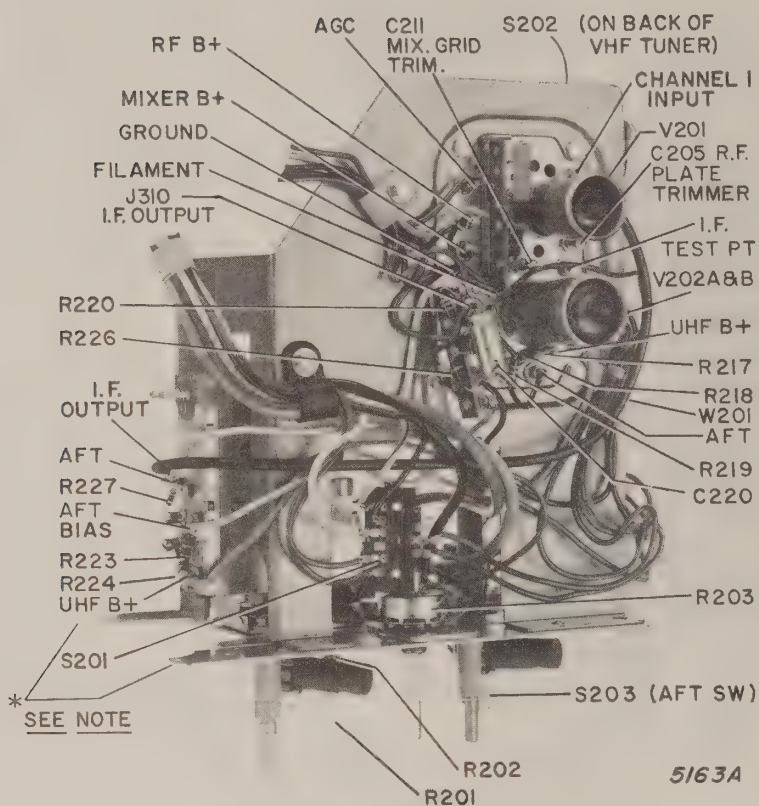
USED IN CHASSIS STAMPED
T511, T513, & T561



25A1283-001
VHF TUNER &
25A1277-002
UHF TUNER
COMPONENTS &
ADJUSTMENTS

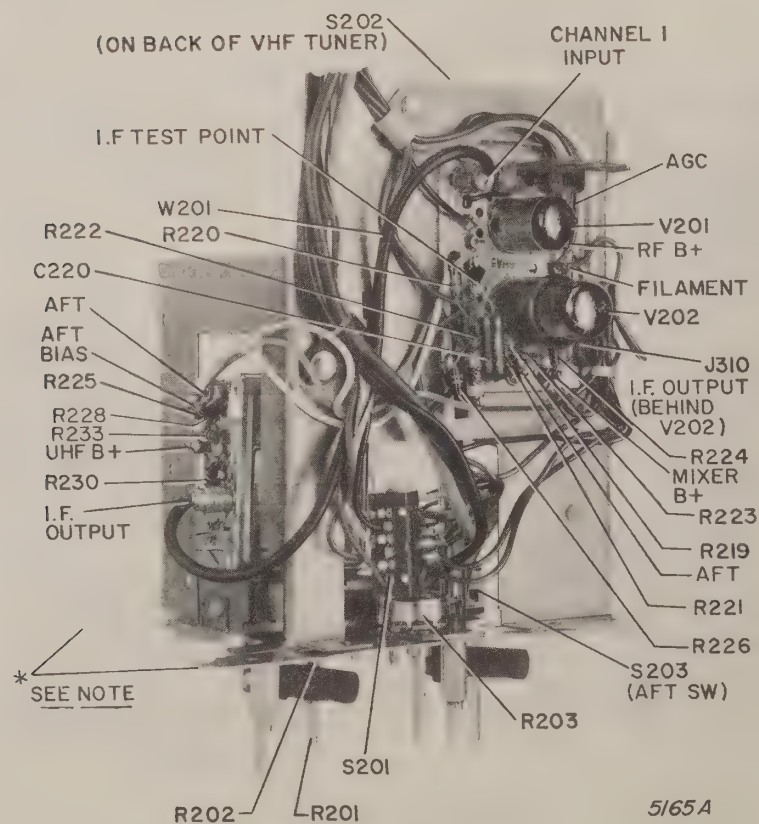
USED IN CHASSIS STAMPED
T512, T514 & T562

TUNER INFORMATION



25A1282-002
VHF TUNER &
25A1275-001
UHF TUNER
COMPONENTS &
ADJUSTMENTS

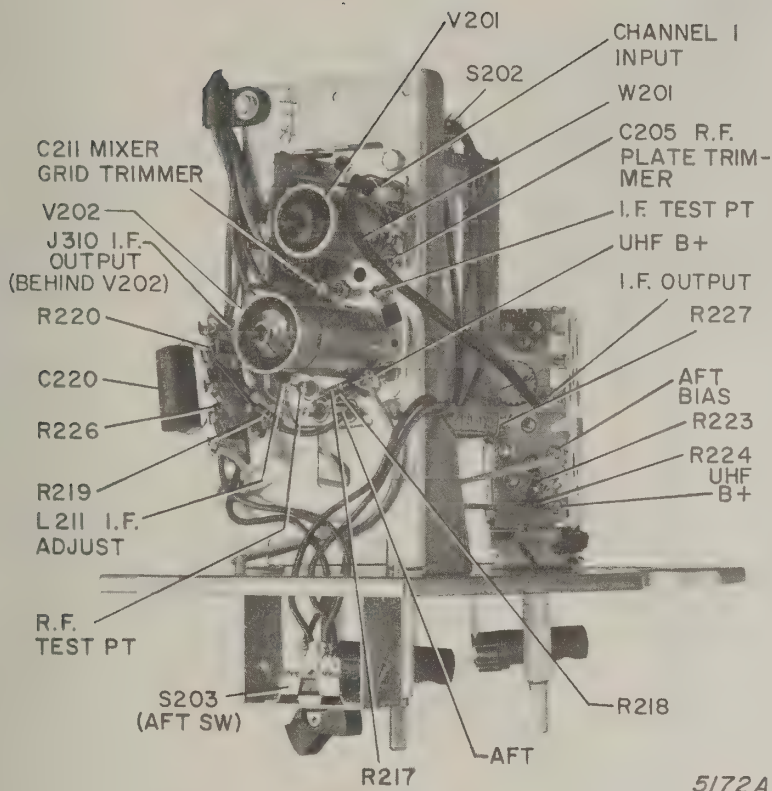
USED IN CHASSIS STAMPED
T521, T523 & T571



25A1283-002
VHF TUNER &
25A1277-001
UHF TUNER
COMPONENTS &
ADJUSTMENTS

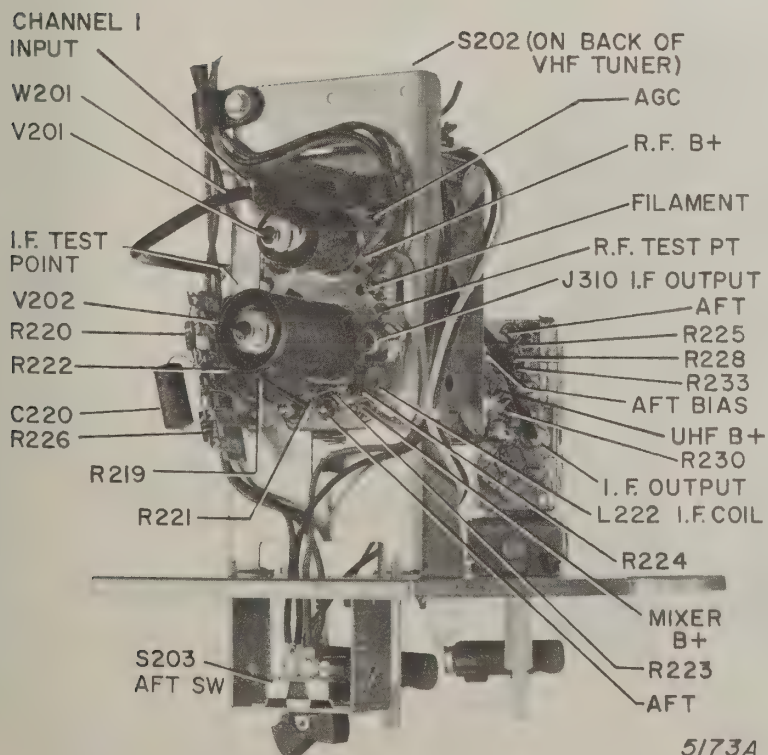
USED IN CHASSIS STAMPED
T522, T524 & T572

TUNER INFORMATION



25A1282-003
VHF TUNER &
25A1275-003
UHF TUNER
COMPONENTS &
ADJUSTMENTS

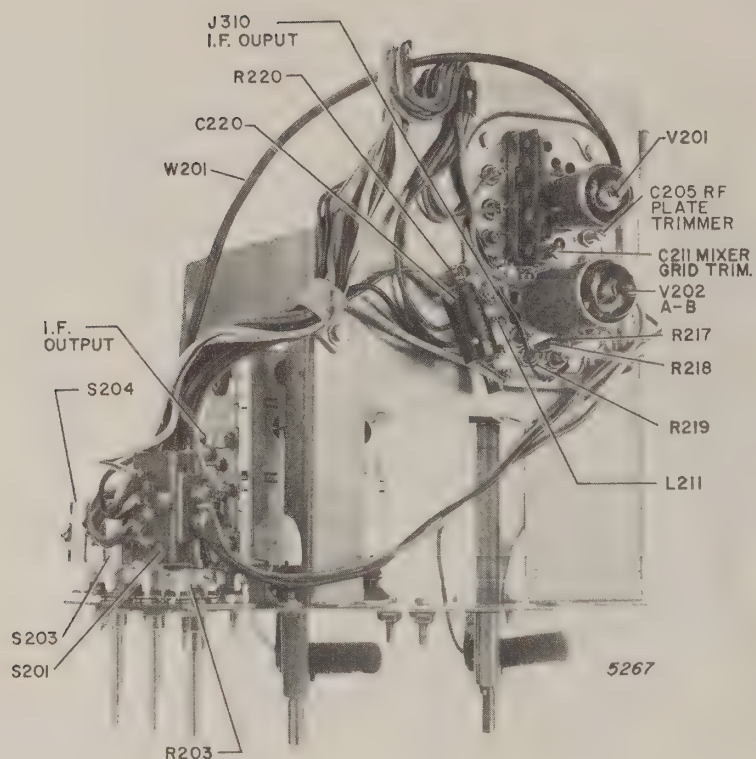
USED IN CHASSIS
STAMPED T531 & T533



25A1283-003
VHF TUNER &
25A1277-003
UHF TUNER
COMPONENTS &
ADJUSTMENTS

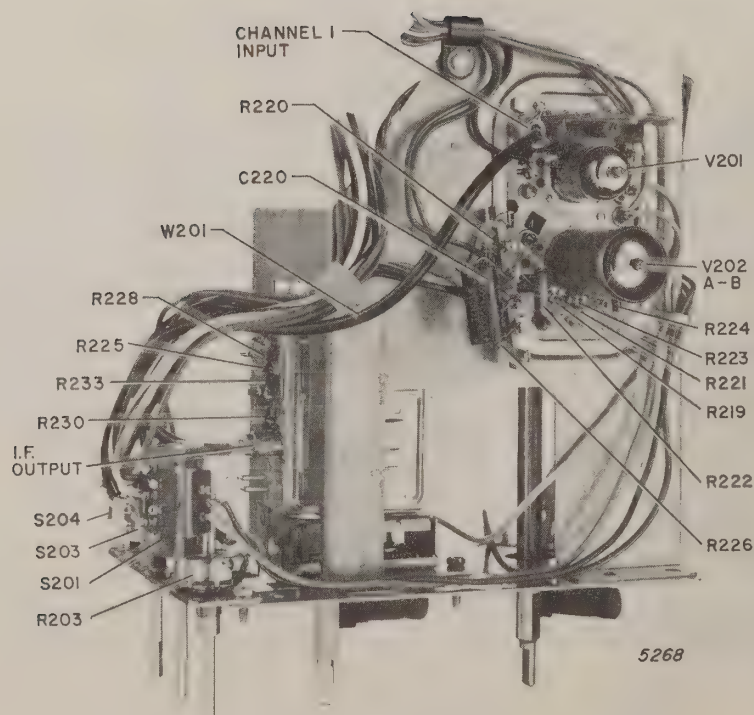
USED IN CHASSIS
STAMPED T532 & T534

TUNER INFORMATION



25A1282-002
VHF TUNER &
25A1275-001
UHF TUNER
COMPONENTS &
ADJUSTMENTS

USED IN CHASSIS
STAMPED T581



25A1283-002
VHF TUNER &
25A1277-001
UHF TUNER
COMPONENTS &
ADJUSTMENTS

USED IN CHASSIS
STAMPED T582

REPLACEMENT PARTS LIST

Use only **GENUINE** factory tested parts to insure service jobs you can depend on and to obtain original set performance. All Models use Chassis T50 Series (Stamped on Chassis Rear Apron).

NOTE: Part numbers may not be identical with those on factory parts; also, the electrical values of some replacement items may differ from the values indicated in the schematic diagram and parts list. The values sub-

stituted in any case are so chosen that operation will be either unchanged or improved. When ordering replacements, use only the part numbers listed.

CAPACITORS

REF. NO.	PART NO.	CAPACITY			
C101	46X0534-002	.047mf			Special,
C102	342X1044-060	.1mf		600V	Mylar
C104A	45X0536-001	200mf		350V	Electrolytic, ...
C104B		120mf		350V	
C104C		80mf		350V	
C104D		5mf		50V	
C105A	45X0539-001	20mf		350V	Electrolytic ...
C105B		20mf		350V	
C105C		50mf		50V	
C106	80X0096-029	100pf			Ceramic
C107	342X1842-020	.18mf		200V	Mylar
C108	80X0098-024	100pf		3KV	Ceramic
C220	45X0534-002	5mf		10VNP	Electrolytic, ...
C237	80X0001-000	.001mf		500V	Ceramic
	(Used on Tuner with Assembly Stamped T51 () T53 () T56 ()				
C301	80X0099-035	6.8K pf	GMV	500V	Ceramic
C302	80X0099-095	.001mf	Z5F	2KV	Ceramic
C303	80X0099-061	.01mf	Z5U	1KV	Ceramic
C306	80X0099-002	.01mf	Z5U	500V	Ceramic
C309					
C312					
C323					
C304	Part of 9A2699-001				
C305	343X4734-029	.047mf		200V	Mylar
C307	80X0099-012	560pf	Z5F	500V	Ceramic
C308	80X0099-008	.001mf	Z5U	500V	Ceramic
C319					
C324					
C325					
C327					
C328					
C333					
C340					
C341					
C342					
C343	Part of 9A2698-001				
C344	80X0099-096	750pf	5% N2200	500V	Ceramic
C345	Part of 9A2697-001				
C310	80X0099-036	10pf	NPO	500V	Ceramic
C311	47X0656-000	1.5pf	±.25pf N3300		Ceramic Tubular
C313	47X0777-000	0.47pf		500V	Molded
C314	17A0279-002	3-15pf			Trimmer
C315	80X0099-050	150pf	5% NPO	500V	Ceramic
C316	349X2242-109	.22mf		100V	Mylar
C317	349X1032-109	.01 mf		100V	Mylar
C318	80X0099-051	680pf	N2200	500V	Ceramic
C319	80X0099-049	220pf	N1500	500V	Ceramic
C320	80X0099-054	2.2K pf	Z5F	500V	Ceramic
C321	80X0099-052	560pf	5% N1500	500V	Ceramic
C322	Part of 9A2667-003				
C323	80X0099-089	5pf	NPO	500V	Ceramic
C324					
C325	80X0099-048	100pf	N33	500V	Ceramic
C326	349X1042-109	.1mf		100V	Mylar
C327	343X1842-049	.18mf		400V	Mylar
C328	80X0099-023	390pf	Z5F	500V	Ceramic

CAPACITORS - (Cont'd.)

REF. NO.	PART NO.	CAPACITY	
C339	80X0099-020	680pf	Z5F 500V Ceramic
C346	47X0664-000	1Kpf	Z5U 500V Ceramic Tubular
C347	47X0663-000	7pf ±.5pf	NPO Ceramic Tubular
C501	80X0099-056	4.7K pf	Z5F 500V Ceramic
C505			
C519			
C502	45X0515-022	1mf	15V Electrolytic ...
C503	80X0099-021	820 pf	Z5F 500V Ceramic
C504	80X0099-006	470pf	Z5F 500V Ceramic
C506	46X0535-002	560pf	630V Polystyrene...
C507	80X0099-010	.01mf	Z5U 500V Ceramic
C508	80X0099-003	.001mf	Z5F 500V Ceramic
C509	80X0099-080	100pf	Z5F 500V Ceramic
C510	80X0099-108	6.8K pf	Z5F 500V Ceramic
C511	343X1032-069	.01mf	600V Mylar
C512	80X0099-061	.01mf	Z5U 1KV Ceramic
C513	80X0099-042	220pf	N750 500V Ceramic
C514	343X4734-049	.047mf	400V Mylar
C515	46X0535-001	820pf	630V Polystyrene ...
C516	80X0099-054	2.2K pf	Z5F 500V Ceramic
C528			
C517	343X4734-029	.047mf	200V Mylar
C518	80X0099-020	680pf	Z5F 500V Ceramic
C520	343X1032-049	.01mf	400V Mylar
C521	80X0099-086	56pf	5% NPO 500V Ceramic
C522	80X0099-082	10pf ±.5pf	NPO 500V Ceramic
C523	343X1544-060	.15mf	600V Mylar
C524	46X0535-003	2.2K pf	.630V Polystyrene ...
C525	343X1042-069	.1mf	600V Mylar
C526	343X4732-069	.047mf	600V Mylar
C527	80X0099-016	.001mf	Z5F 1KV Ceramic
C529	80X0099-115	.0033mf	Z5F 3KV Ceramic
C530	45X0540-001	10mf	350V Electrolytic
C531	45X0515-019	50mf	50V Electrolytic
C532	80X0099-017	.02mf	Z5U 500V Ceramic
C701	80X0099-036	10pf	NPO 500V Ceramic
C702	80X0099-058	33pf	N150 500V Ceramic
C709			
C713			
C703			
C721	349X1042-109	.1mf	100V Mylar
C735	80X0099-003	.001mf	Z5F 500V Ceramic
C704			
C711			
C723			
C726			
C729			
C705			
C706			
C710			
C717			
C718			
C731	80X0099-002	.01mf	Z5U 500V Ceramic
C732			
C734			
C736			
C738			
C740			
C745			
C746			
C750			
C751			

TO AVOID DELAY WHEN ORDERING PARTS PLEASE INCLUDE: MODEL & PART NOS.

REPLACEMENT PARTS LIST (Cont.)

CAPACITORS - (Cont'd.)

REF. NO.	PART NO.	CAPACITY			
C707	80X0099-111	130pf	N750	500V	Ceramic
C708	349X1032-109	.01mf		100V	Mylar
C712	343X1842-049	.18mf		400V	Mylar
C714	80X0099-041	33pf	N150	500V	Ceramic
C730					
C715	343X1032-049	.01mf		400V	Mylar
C719					
C739					
C720	80X0099-073	150pf	N750	1K	Ceramic
C722	47X0778-000	.82pf	5%	500V	Ceramic
C727					
C724	80X0099-057	220 pf	Z5F	500V	Ceramic
C725	17A0279-002	3 to 15pf			Trimmer
C728	357X5591-251	590 pf	5%	500V	Mica
C752					
C733	349X4732-109	.047mf		100V	Mylar
C737	80X0099-082	10pf $\pm$.5pf	NPO	500V	Ceramic
C741	80X0099-016	.001mf	Z5F	1K	Ceramic
C742					
C743	357X5331-351	330pf	5%	500V	Mica
C744					
C748	80X0099-080	100pf	Z5F	500V	Ceramic
C749	349X2242-100	.22mf		100V	Mylar
C801	352X1044-029	.1mf		200V	Mylar
C802	347X8232-049	.082mf		400V	Mylar
C803	347X1542-049	.15mf		400V	Mylar
C804	352X2742-029	.27mf		200V	Mylar
C806					
C805	347X1242-029	.12mf		200V	Mylar
C807	45X0515-008	10mf		10V	Electrolytic
C901	343X4734-049	.047mf		400V	Mylar
C902	80X0098-038	230pf		5KV	Ceramic
C903	45X0515-002	100mf		10V	Electrolytic
C904	80X0099-117	100pf	N750	1KV	Ceramic
C905	80X0099-010	.01mf	Z5U	2KV	Ceramic
C908					
C906	343 X3332-069	.033mf		600V	Mylar
C907	80X0099-024	3.3K pf	Z5F	500V	Ceramic
C909	80X0099-008	.001mf	Z5U	500V	Ceramic
C910	46X0533-001	2500pf		10KV	Metalized Mylar
C1101	80X0099-016	.001mf	Z5F	1KV	Ceramic
C1102					
C1401	80X0099-100	22pf		500V	Ceramic
C1406					
C1407					
C1402	80X0099-042	220pf		500V	Ceramic
C1403	80X0099-003	1K pf		500V	Ceramic
C1405					
C1409					
C1410					
C1411					
C1404	80X0099-015	15pf		500V	Ceramic
C1408	80X0099-060	1.5pf $\pm$.25pf		500V	Ceramic
C1412	47X0784-001	1K pf		500V	Feed Thru
C1413					

RESISTORS

REF. NO.	PART NO.	OHMS	WATTS	
R101	340X3225-841	2.2 meg.	0.5	Carbon
R102	340X3104-251	100K	0.5	Carbon
R103				
R104	43X0401-030	1.9K	20.0	Wirewound
R105	340X5271-841	270	2.0	Carbon
R106	340X9682-641	6.8K	7.0	Film
R107	40X0608-001	10		Vert. Centering Control
R108	340X3471-841	470	0.5	Carbon
R109				
R110	340X3681-841	680	0.5	Carbon
R111	40X0577-004	10K		Pin Amp Cont
R112	43X0450-043	4.7K	2.0	Film

RESISTORS - (Cont'd)

REF. NO.	PART NO.	OHMS	WATTS		
R201	See Listing Below Schematic Diagram				
R202					
R203					
R204		40X0594-003	350		Contrast Cont...
R205	40X0585-048	750K		Vert. Hold Cont.	
R206	40X0585-063	250K		Brite Cont.....	
R219	340X3273-841	27K	0.5	Carbon	
R220					
R222	340X4103-841	10K	1.0	Carbon	
	Used w/25A1283-() Tuner Only				
R226	340X3105-841	1 meg.	0.5	Carbon	
	Used w/25A1275-() Tuner Only				
	340X3154-841	150K	0.5	Carbon	
	Used w/25A1277-() Tuner Only				
	25A1279-()				
R301	340X3334-841	330K	0.5	Carbon	
R349					
R302	340X3471-841	470	0.5	Carbon	
R336					
R303	340X3564-841	560K	0.5	Carbon	
R304	43X0401-036	2K	5.0	Wirewound	
R305	Part of 9A2699-001				
R306	340X3474-841	470K	0.5	Carbon	
R307	340X3332-841	3.3K	0.5	Carbon	
R308	340X3271-841	270	0.5	Carbon	
R311					
R309	Part of 9A2698-001				
R310	340X3103-841	10K	0.5	Carbon	
R312					
R313	340X5103-641	10K	2.0	Film	
R314	340X3273-841	27K	0.5	Carbon	
R315	340X3102-252	1K	0.5	Carbon	
R318					
R319	40X0614-001	6K		Blue Dr. Cont....	
R316A					
R316B	340X5682-641	6.8K	2.0	Green Dr. Cont...	
R320					
R321	340X5563-641	56K	2.0	Film.....	
R322	340X7562-641	5.6K	4.0	Film.....	
R323	340X3104-841	100K	0.5	Carbon	
R347					
R324	40X0590-009	500K		Brite Range Cont.	
R325	340X3182-841	1.8K	0.5	Carbon	
R326	340X3101-841	100	0.5	Carbon	
R340					
R327	340X3822-831	8.2K	5%	0.5 Carbon	
R328	340X0133-641	13K		10.0 Film	
R329	340X3472-841	4.7K	0.5	Carbon	
R330	340X3392-841	3.9K	0.5	Carbon	
R331	340X3274-841	270K	0.5	Carbon	
R332	340X3331-841	330	0.5	Carbon	
R333	340X3221-831	220	5%	0.5 Carbon	
R334	340X3102-841	1K	0.5	Carbon	
R337					
R353	40X0590-007	750		41.25 MHz. Trap Cont	
R335					
R338	40X0590-008	5K		AGC Control	
R339	340X3181-831	180	5%	0.5 Carbon	
R341	340X3560-831	56	5%	0.5 Carbon	
R342	340X4152-841	1.5K		1.0 Carbon	
R343	340X6273-641	27K		3.0 Film	
R344	340X3154-821	150K	Special	Mtch. Pr. Carbon.	
R345					
R346	340X3470-831	47	5%	0.5 Carbon	
R348	340X4271-841	270		1.0 Carbon	
R350	340X3394-841	390K	0.5	Carbon	
R351	340X3106-841	10 meg.	0.5	Carbon	
R352	340X3472-831	4.7K	5%	0.5 Carbon	
R354	40X0590-006	10K		47.25 MHz. Trap Cont	
R355	340X3151-841	150	0.5	Carbon	

REPLACEMENT PARTS LIST (Cont.)

RESISTORS - (Cont'd)

REF. NO.	PART NO.	OHMS	WATTS	
R356	340X3823-841	82K	0.5	Carbon
R357	340X3270-841	27	0.5	Carbon
R358	340X3224-841	220K	0.5	Carbon
R501	340X4683-841	68K	1.0	Carbon
R518				
R502	340X3106-841	10 meg.	0.5	Carbon
R503	340X3683-831	68K	5% 0.5	Carbon
R504	340X4154-841	150K	1.0	Carbon
R505	340X3333-841	33K	0.5	Carbon
R526				
R533				
R506	340X3683-841	68K	0.5	Carbon
R507	340X4473-841	47K	1.0	Carbon
R508	340X3272-841	2.7K	0.5	Carbon
R509	340X3563-841	56K	0.5	Carbon
R510	340X3154-841	150K	0.5	Carbon
R511	340X3394-841	390K	0.5	Carbon
R512				
R513	340X3824-841	820K	0.5	Carbon
R514	340X3823-841	82K	0.5	Carbon
R515	340X3473-841	47K	0.5	Carbon
R534				
R516	340X3104-841	100K	0.5	Carbon
R517	340X4124-841	120K	1.0	Carbon
R519	340X3562-841	5.6K	0.5	Carbon
R520	340X6821-641	820	3.0	Film
R521	340X3102-841	1K	0.5	Carbon
R522	340X3273-841	27K	0.5	Carbon
R523	340X3275-841	2.7 meg.	0.5	Carbon
R524	340X3274-841	270K	0.5	Carbon
R525	340X3332-841	3.3K	0.5	Carbon
R527	340X3105-841	1 meg.	0.5	Carbon
R528A	40X0614-003	50K		Vert. Lin. Control...
R528B		7.5 meg.		
R529	340X4105-841	1 meg.	1.0	Carbon
R530	340X3225-841	2.2 meg.	0.5	Carbon
R532	340X4393-831	39K	5% 1.0	Carbon
R701	340X3221-841			
R701	340X3221-842			
R701	340X3221-841	220	0.5	Carbon
R702	340X6153-641	15K	3.0	Film
R703	340X5333-641	33K	2.0	Film
R704	340X4473-841	47K	1.0	Carbon
R761				
R705	340X3561-841	560	0.5	Carbon
R707				
R706	340X3335-841	3.3 meg.	0.5	Carbon
R708	340X8103-641	10K	5.0	Film
R709	340X3102-841	1K	0.5	Carbon
R710	340X5183-641	18K	2.0	Film
R711	340X3474-841	470K	0.5	Carbon
R716				
R720				
R732				
R735				
R743				
R712	340X3103-831	10K	5% 0.5	Carbon
R713	340X3105-841	1 meg.	0.5	Carbon
R718				
R722				
R724				
R744				
R755	340X3224-841	220K	0.5	Carbon
R764				
R714				
R733				
R740	340X3224-841	220K	0.5	Carbon
R746				

RESISTORS - (Cont'd)

REF. NO.	PART NO.	OHMS	WATTS	
R715	340X5273-641	27K	2.0	Film
R725				
R741	340X3274-841	270K	0.5	Carbon
R717				
R719	340X3682-841	6.8K	0.5	Carbon
R721	340X3102-251	1K	0.5	Carbon
R723				
R742				
R726	340X3471-841	470	0.5	Carbon
R739				
R769				
R727	340X4131-831	130	5% 1.0	Carbon
R728	340X3822-831	8.2K	5% 0.5	Carbon
R729	340X5201-641	200	2.0	Film
R730B	40X0614-004	1 meg.		Killer Cont.
R731	340X3683-841	68K	0.5	Carbon
R734	340X3475-831	4.7 meg.	5% 0.5	Carbon
R736	340X3683-621	68K	0.5	Film
R737	340X3225-841	2.2 meg.	0.5	Carbon
R756				
R738	340X3391-841	390	0.5	Carbon
R745	340X3223-841	22K	0.5	Carbon
R771				
R747	340X3335-721	3.3 meg.	2% 0.5	Film
R748	340X3154-621	150K	2% 0.5	Film
R749	340X3155-841	1.5 meg.	0.5	Carbon
R751	340X3104-841	100K	0.5	Carbon
R752	340X3152-831	1.5K	5% 0.5	Carbon
R753	340X4154-831	150K	5% 1.0	Carbon
R754	340X3184-841	180K	0.5	Carbon
R757	340X3124-841	120K	0.5	Carbon
R766				
R758	340X3473-841	47K	0.5	Carbon
R759				
R770	340X3392-841	3.9K	0.5	Carbon
R760				
R774	340X4682-841	6.8K	1.0	Carbon
R762				
R763	340X3823-841	82K	0.5	Carbon
R765A	40X0615-001	1.5 meg.		Red Screen Drv. .
R765B				
R765C				
R772	340X3394-831	390K	5% 0.5	Carbon
R773	340X4393-841	39K	1.0	Carbon
R801	40X0570-007	90	3.0	Wirewound
R802	340X4271-841	270	1.0	Carbon
R803	340X4101-851	100	1.0	Carbon
R806				
R804	40X0570-003	120	1.0	Wirewound
R805				
R813	40X0570-004	60	1.0	Wirewound
R808				
R814				
R815	340X4151-851	150	1.0	Carbon
R809				
R810	340X3470-841	47	0.5	Carbon
R811	40X0570-001	150	1.0	Wirewound
R812	40X0570-006	500	1.0	Wirewound
R816	340X3391-841	390	0.5	Carbon
R901	340X3104-841	100K	0.5	Carbon
R902	40X0619-001	10		Horiz. Center, Cont.
R903	340X8182-641	1.8K	5.0	Film
R904	340X4221-831	220	5% 1.0	Carbon
R905	340X3102-841	1K	0.5	Carbon
R906	340X3335-841	3.3 meg.	0.5	Carbon
R918				
R907	340X3155-831	1.5 meg.	5% 0.5	Carbon
R908	340X4182-841	1.8K	1.0	Carbon
R909	340X4105-831	1 meg.	5% 1.0	Carbon

REPLACEMENT PARTS LIST (Cont.)

RESISTORS - (Cont'd)

REF. NO.	PART NO.	OHMS	WATTS	
R910	40X0590-011	2.5 meg.		H.V. Adjust Cont
R912	340X3224-841	220K	0.5	Carbon
R913	340X5475-851	4.7 meg.	2.0	Carbon
R914 } R917 }	43X0451-003	30 meg.		H.V. Film
R915	40X0618-001	15 meg.		Focus Control
R916	43X0451-004	40 meg.		H.V. Film
R1401	340X3102-841	1K	0.5	Carbon
R1402	340X3331-841	330	0.5	Carbon
R1403	340X3101-841	100	0.5	Carbon
R1404 } R1408 }	340X3473-841	47K	0.5	Carbon
R1405	340X3223-841	22K	0.5	Carbon
R1406	340X3333-841	33K	0.5	Carbon
R1407	340X3392-841	3.9K	0.5	Carbon

TRANSFORMERS AND COILS

REF. NO.	PART NO.	DESCRIPTION
L101 } L102 }	9A2711-001	Degaussing Coil
L103	52X0114-002	Choke, Filter
L104A } L104B }	9A2695-001	Line Filter
L105	9A2629-002	Pin Phase Coil
L106 } L107 } L108 } L109 }	Part of Deflection Yoke Assembly - 9A2707-001	
L301	9A2699-001	Sound Detector Coil
L302	9A2697-001	Sound Take-Off Coil
L303	9A2553-003	Coil, Choke 12 uh
L304	9A2553-001	Coil, Choke 1.8uh
L305	9A2563-000	47.25 MHz Trap Coil
L306	36A0095-004	Peaking Coil 12uh
L307	9A2432-000	Coil, RF Choke 16uh
L308	9A2565-000	Coil, 4.5 MC Trap
L309	36A0095-011	Peaking Coil 39uh
L310	36A0095-010	Peaking Coil 68uh
L311	36A0095-009	Peaking Coil 330uh
L312	9A2380-000	Filament Choke 1.5uh
L501	9A2708-001	Coil, Horiz. Oscillator
L701	9A2658-003	Coil, Chroma Take-Off
L703 } L704 } L707 }	36A0095-008	Inductor 620uh (Special)
L705	9A2680-003	Choke 3.3uh
L706	9A2710-001	Coil, Osc. Bias
L709	36A0095-013	Choke 33.0uh
L801	9A2555-003	Coil Right R/G Vertical
L802	9A2634-002	Coil Right R/G Horizontal
L803	9A2630-001	Coil - Blue Shaper Horizontal
L804	9A2556-003	Coil Right Blue Horizontal
L805A } L805B } L805C }	Part of 9A2649-002 Convergence Ass'y	
L901 } L902 }	9A2553-004	Choke, 5.6uh
L1401	9A2681-001	Input Coil
L1402	9A2681-002	Discriminator Coil, Primary
L1403	9A2681-003	Discriminator Coil, Secondary
L1404 } L1405 }	9A2553-001	Choke Coil 1.8 uh
T101	53X0445-002	Power Transformer
T102	51X0249-001	Audio Output Transformer
T103	51X0248-001	Vertical Output Transformer
	38A4145-000	Less - 5 Female Terminals
	38A4145-000	Vertical Output Transformer w/5 Female Terminals
T104	52X0116-003	Pin Transformer

TRANSFORMERS AND COILS - (Cont'd)

REF. NO.	PART NO.	DESCRIPTION
T301	9A2698-001	4.5 MHz Transformer
T302	9A2562-001	1st IF Grid Transformer
T303	9A2562-003	1st Pix IF Transformer
T304	9A2562-002	2nd Pix IF Transformer
T305	9A2667-003	3rd Pix IF Transformer
T306	9A2655-001	Mutual Coupling Transformer
T701	9A2661-003	1st Bandpass Transformer
T702	9A2709-001	2nd Bandpass Transformer
T703	9A2685-002	Burst Amp Transformer
T704	9A2660-002	ECO Transformer
T901	53X0453-001	Horizontal Output Transformer (Includes - R902 - C902 - L901)

TRANSISTORS

REF. NO.	PART NO.	DESCRIPTION
Q301	86X0006-001	AGC Ampl.
Q302	86X0034-001	Video Ampl.
Q501	86X0048-001	Sync. Separator
Q701	86X0045-001	ACC Amp.
Q702	86X0044-001	Color Killer
Q703	86X0047-001	Tint Mod
Q1401	86X0038-001	Auto. Fine Tuning Amp.

MISCELLANEOUS

Ref. No.	Part No.	Description
AC	6A0380-001	Connector Male-P106 (AC Interlock)
	13X0944-003	Line Cord
	(Used on Chassis T511, T512, T513, T514, T523, T524, T531, T532, T533, T534, T561, T562)	
	38A4193-000	Plug & Lead Ass'y for Brite, Contrast & Vertical Hold
	(Used on Chassis T521, T522, T571, T572, T581, T582)	
	38A4194-000	Plug & Lead Ass'y for Brite, Contrast & Vertical Hold
	(Used on Chassis T521, T522, T523, T524, T571, T572, T581, T582)	
	38A4178-000	Cable Ass'y for Volume Control
	(Used on Chassis T521, T522, T523, T524, T571, T572)	
	38A4179-000	Cable Ass'y for Tint Control
	38A4180-000	Cable Ass'y for Color Control
Cable Plug & Lead Ass'y.	38A4160-000	Male Cable Assembly for Pilot Light
	38A4161-000	Female Cable Assembly for Pilot Light
	38A4171-000	Cable Assembly for Volume Control
	38A4177-000	Cable Assembly for Color Control
	(Used on Chassis T511, T512, T513, T514, T531, T532, T533, T534)	
	38A4176-000	Cable Assembly for Tint Control
	(Used on Chassis T561, T562)	
	38A4389-000	Cable Assembly for Tint Control
	(Used on Chassis T581, T582)	
	38A4402-000	Tuner Power Plug & Lead Assembly
	38A4350-000	Power Cable & Receptacle Assembly
	38A4352-000	Cable Assembly for Tint Control
	38A4353-000	Cable Assembly for Color Control
	38A4349-000	On-Off, AFT, & Tint Mod. Sw. Assembly
	For all other specific Tint Mod. Sw. & Cable Assemblies see Cabinet Miscellaneous List or Ref. No. S204	
	(Used on Chassis T511, T512, T513, T514, T521, T522, T523, T524, T561, T562, T571, T572)	
	38A4242-000	Tuner Power Plug & Lead Assembly
CB-101	2A0610-001	Circuit Breaker
Converg	9A2649-002	Coil Ass'y.(Center Converg.)
CR-301	66X0020-000	Sound Det. (1N295)
CR-302	66X0020-000	Crystal CR302 part of (9A2667-003) (3rd Pix IF Trans) (1N295)

REPLACEMENT PARTS LIST (Cont'd)

MISCELLANEOUS — Continued

MISCELLANEOUS — Continued

REF. NO.	PART NO.	DESCRIPTION
CR-501A } CR-501B }	66X0025-000	Selenium Rectifier (9LR2-24)
CR-502	66X0023-003	Silicon Rectifier (GE-IN5061) (GL-IN4385)
CR-801A } B, C, D }	66X0041-001	Silicon Rectifier (Convergence) (GI-TV3C)
D-1401 } D-1402 }	66X0020-000	Crystal (AFT) (IN295)
DL-301	9A2573-003	Delay Line
F-101	320X2400-000	#24 Bare Copper Fuse Wire
	345X0133-104	Fibre Glass, Fuse Insulation 2 ft. Length
F-102	320X2800-000	#28 Bare Copper Fuse Wire
	345X0047-100	Fibre Glass, Fuse Insulation 2 ft. Length
Lamp	7A0304-000	#1847 Pilot Light
L-106, 107 } 108, 109 }	9A2707-001	Deflection Yoke Coil Ass'y., incl. R112, C108, RT1101, P105
Magnet	2A0590-003	Lateral Purity Assembly
	13X1145-001	Pix Tube Socket & Lead Ass'y
	8X0317-008	Pix Tube Mounting Ring Cushion
	8X0322-001	Pix Tube Mounting Bracket Cushion
	28X0707-000	Dag Grounding Spring
	8X0334-001	Anode (HV) Insulating Cup
	28X0763-001	Anode (HV) Spring Clip
	25V Color Chassis - Bonded & Banded Kimcode Pix Tube	
	38A4169-000	Purity Shield & Degaussing Coil Ass'y ..
	25V Color Chassis - Bonded Pix Tube	
	28X0733-008	Yoke Spring - 4 Req.
	25X2678-001	Pix Tube Mounting Brackets - 4 Req.
	8X0330-001	Pix Tube Mounting Bumper - 4 Req.
	28X0761-001	Pix Tube Mounting Ring
	25V Color Chassis - Banded Kimcode Pix Tube	
	28X0733-009	Yoke Spring - 4 Req.
	25X2739-001	Pix Tube Mounting Bracket - 4 Req.
	8X0336-001	Pix Tube Mounting Bumper - 4 Req.
	28X0761-001	Pix Tube Mounting Ring
	30X0700-001	Grounding Clip - 2 Req.
Pix Tube	23V Color Chassis - Bonded & Banded Kimcode Pix Tube	
	38A4140-000	Purity Shield & Degaussing Coil Ass'y. ...
	23V Color Chassis - Banded Kimcode Pix Tube	
	with Metal Cabinet ONLY	
	38A4418-000	Purity Shield & Degaussing Coil Ass'y. ...
	23V Color Chassis - Bonded Pix Tube	
	28X0733-002	Yoke Spring - 4 Req.
	25X2678-001	Pix Tube Mounting Bracket - 4 Req.
	8X0313-001	Pix Tube Mounting Bumper - 4 Req.
	28X0725-001	Pix Tube Mounting Ring
	23V Color Chassis - Banded Kimcode Pix Tube	
	28X0733-007	Yoke Spring - 4 Req.
	25X2739-001	Pix Tube Mounting Bracket - 4 Req.
	8X0327-001	Pix Tube Mounting Bumper - 4 Req.
	28X0725-001	Pix Tube Mounting Ring
	30X0700-001	Grounding Clip - 2 Req.
PW-300	38A4341-000	Prt. Crt. Brd. - Pix IF & Sound (P176) w/Tubes
PW-500	38A4342-000	Prt. Crt. Brd. - Deflection (P177) w/Tubes
PW-700	38A4293-000	Prt. Crt. Brd. - Chroma (P169) w/Tubes
PW-800	38A4131-000	Prt. Crt. Brd. - Convergence (P160) (Incl. Mtg. Bracket, Cable - plug & Convergence Coils Ass'y.)
	38A4252-000	Prt. Crt. Brd. - Convergence (P160) (Incl. Mtg. Bracket Only)
PW-900	38A4128-000	Prt. Crt. Brd. - High Voltage (P157) w/Tubes
		Prt. Crt. Brd. - Focus (P159) (Part of PW900)

REF. NO.	PART NO.	DESCRIPTION
	1X0570-001	Brace for P159
	30X0718-001	Contact Pins Male P901-902
	30X0705-001	Mounting Lugs (Used on PC159)
	10A1188-901	Focus Control Shaft Guide Ass'y
PW-1100	38A4129-000	Prt. Crt. Brd. - Power Supply (P158)
	38A4227-000	Prt. Crt. Brd. - Power Supply w/AC Receptacle. Used on Combination Chassis ONLY
PW-1400	38A4184-000	A.F.T. Ass'y Complete w/Cable (P161)
	38A4150-000	6 Terminal Assembly Female
	38A4151-000	9 Terminal Assembly Female
	38A4152-000	15 Terminal Assembly Female
	38A4149-000	Convergence Assembly Female
	38A4153-000	Yoke Assembly Female
RV-101	43X0456-001	Varistor (White Dot or Band)
RV-901	43X0457-004	Varistor (Black & Blue Dot or Bands)
RV-1101	43X0454-001	Varistor
RT-101	43X0453-001	Thermistor
RT-1101	43X0455-002	Thermistor
	(Used on Chassis Stamped T511, T512, T513, T514, T561, T562)	
	41X0128-004	Pilot Light
	(Used on Chassis Stamped T521, T522, T523, T524, T531, T532, T533, T534, T571, T572, T581, T582)	
	41X0129-001	Pilot Light
Shields	20X1907-001	Retaining Clip, Pilot Light
	32X0467-000	6JH6-6GM6 Tube
	32X0468-000	6GH8A Tube (V-701)
	32X0469-000	6GH8A Tube (V-703)
	32X0484-001	ECO & Band Pass Coil
	32X0485-001	I-F Input
	32X0501-001	Bottom (PW300) Pix I-F & Sound Board ...
S-101	2A0595-001	Vacation Slide Switch
	(Used on Chassis T511, T512, T513, T514, T531, T532, T533, T534)	
	2A0628-001	On-Off Switch (AC)
	(Used on Chassis T561, T562)	
S-201	38A4386-000	On-Off Switch & Cap Ass'y
	(On Chassis T521, T522, T523, T524, T571, T572, T581, T582 - Switch - Part of Volume Control - See Listing Below Schematic Diagram)	
S-202A } S-202B }	2A0624-001	Wafer Switch (on Tuner back)
	(Used on Chassis T511, T512, T513, T514, T561, T562)	
	*38A4159-000	Ass'y. AFT Sw. & Gear 30 Teeth Gear (earlier models) ...
	*38A4431-000	Ass'y. AFT Sw. & Gear 14 Teeth Gear (later models)
S-203	(Used on Chassis T521, T522, T523, T524, T571, T572)	
	2A0611-001	AFT Switch
	(Used on Chassis T531, T532, T533, T534)	
	2A0629-001	AFT Switch
	25X2730-001	Cover, AFT
	(Used on Chassis T581, T582)	
	2A0635-001	Tint Mod. Switch (Part of AFT Sw.)
	(Used on Chassis T571, T572)	
S-204	(Part of 78X0057-010 - Color Control)	
	For all other specific Tint Mod. Sw. & Cable Ass'y. see Cabinet Miscellaneous List or Listing Below Schematic Diagram)	
S-301	2A0630-001	Slide Switch (Service)
	37X0360-001	Lever Arm
	303X1215-216	Ph. Head Screw
	20X1950-001	Fastener, Push Nut
	20X1877-003	Keps Nut
	66X0023-001	Silicon Diode (Fairchild FD222) ..
SD-301	66X0038-001	Silicon Diode (SD701-02)
SD-701, 702	66X0023-003	Silicon Rectifier (GE-IN506) (GI-IN4385)
SD-1101, 1102		
1103, 1104		
SE-901	66X0036-001	Rectifier Boosted Boost (Special)

REPLACEMENT PARTS LIST (Cont'd)

MISCELLANEOUS - Continued

REF. NO.	PART NO.	DESCRIPTION
SG-301, 302 303	Part of Copper Foil on PW300 Board	
SG-701, 702 703, 704 705, 706	Part of Copper Foil on PW700 Board	
SG-901	28X0764-001	Spring
Terminals	30X0710-001	Female (Used as Grounding Pts. All PC Boards)
	30X0715-001	Female (Used as Receptacle for Circuit Connections on all PC Boards)
Test Points & Connectors	6A0381-001	PC Board Male Plug for Wire Wrap
	30X0701-002	Pin Test Point (TP) & P1101
Tube Sockets	30X0703-002	Pin Bead Chain J-307,308,309 . .
	3A0543-002	12BY7A-6GH8A
	3A0543-003	6JC6-6GH8A
	3A0548-002	6JH6-6GM6
	3A0548-001	6HZ6-6EW6
	3A0559-002	6AQ5A
	3A0560-005	6GH8A
	3A0593-001	6MF8
	3A0598-001	6KG6A-6EC4A
Sockets	(Used on Chassis T511, T512, T513, T514, T561, T562)	
	7A0317-001	VHF Pilot Light (PL-201)
	7A0317-002	UHF Pilot Light (PL-202)
	(Used on Chassis T521, T522, T523, T524, T571, T572, T581, T582)	
	7A0337-001	VHF Pilot Light (PL-201)
	7A0338-001	UHF Pilot Light (PL-202)
	(Used on Chassis T531, T532, T533, T534)	
	7A0345-001	VHF Pilot Light (PL-201)
	7A0345-002	UHF Pilot Light (PL-202)

MISCELLANEOUS - Continued

REF. NO.	PART NO.	DESCRIPTION	
Tuners	25A1282-001	VHF } Used w/Chassis T511, T513,	
	25A1275-002	UHF } T561	
	25A1283-001	VHF } Used w/Chassis T512, T514,	
	25A1277-002	UHF } T562	
	25A1282-002	VHF } Used w/Chassis T521, T523,	
	25A1275-001	UHF } T571, T581	
	25A1283-002	VHF } Used w/Chassis T522, T524,	
	25A1277-001	UHF } T572, T582	
	25A1282-003	VHF } Used w/Chassis T531, T533	
	25A1275-003	UHF }	
Tuner Misc.	25A1283-003	VHF } Used w/Chassis T532, T534	
	25A1277-003	UHF }	
	(Used on Chassis T511, T512, T513, T514, T561, T562)		
	38A3996-000	Fine Tuning Gear Assembly.....	
	(Used on Chassis T511, T512, T513, T514, T561, T562)		
	38A4157-000	Tuner Bracket & Gear Assembly	
	38A4148-001	High Voltage Tripler & Lead Ass'y	
	W-101	13X1003-007	Shielded Lead Ass'y. (Color Control).....
	W-102	13X1011-004	Shielded Lead Ass'y. (Tint Control).....
	W-103	13X1156-001	High Voltage Lead & Receptacle Ass'y. (Tripler to Horiz. Output Trans.).....
W-104	13X1155-001	High Voltage Lead & Receptacle Ass'y. (Tripler to Focus Panel).....	
	(Used on Chassis T512, T514, T522, T524, T532, T534, T562, T572, T582)		
	W-201	38A4268-000	Shielded Cable Assembly
	W-301	13X1150-001	Input I-F Cable Assembly
		30X0720-001	I-F Cable Retainer Clip.....
	W-1401	38A4139-000	Shielded Cable & Socket Ass'y. (AFT)....
	Y-701	68X0004-002	3.58 MHz. Crystal

Various Terminals Used on Molex Male or Female Plugs or Connectors

Terminal Male	30X0706-001	Used W/Shielded Cable & Soc. Ass'y. (AFT)	Terminal Male	30X0708-001 Cont'd.	Used W/Color Control Cable Ass'y.
		Used W/Volume Control Cable Ass'y.			Used W/Tuner Cable VHF
Terminal Female	30X0707-001	Used W/Pilot Light Cable Ass'y. Used W/I-F Input Cable	Terminal Female	30X0709-001	Used W/Convergence Cable Ass'y.
		Used W/Shielded Cable & Soc. Ass'y. (AFT)			Used W/Deflection Yoke
Terminal Male	30X0708-001	Used W/5½" H.V. Lead & Receptacle Ass'y.			Used W/6 Terminal Receptacle Ass'y.
		Used W/Volume Control Cable Ass'y.			Used W/9 Terminal Receptacle Ass'y.
		Used W/Pilot Light Cable Ass'y. Used W/Convergence Cable Ass'y.			Used W/15 Terminal Receptacle Ass'y.
		Used W/Secondary Control Plug & Lead Ass'y.			Used W/Convergence Receptacle Ass'y.
		Used W/Auxiliary Control & Plug Ass'y.			Used W/Yoke Receptacle Ass'y. Used W/10½" H.V. Lead & Receptacle Ass'y.
		Used W/Tint Control Cable Ass'y.			Used W/Vert. Output Trans- former Ass'y.

Used on Molex Male or Female Plugs or Connectors Pin Extracting Tools

W.G. PART NO.	MFG. PART NO.	DESCRIPTION	W.G. PART NO.	MFG. PART NO.	DESCRIPTION
67X0036-001	#HT2285	Tool (Used for Extracting 30X0708-001 & 30X0709-001 Terminals from Plastic Housing).	67X0037-001	#HT2038	Tool (Used for Extracting 30X0706-001 & 30X0707-001 Terminals from Plastic Housing).

NOTE: The above tool may be obtained from Wells-Gardner.

CHART NO. 2

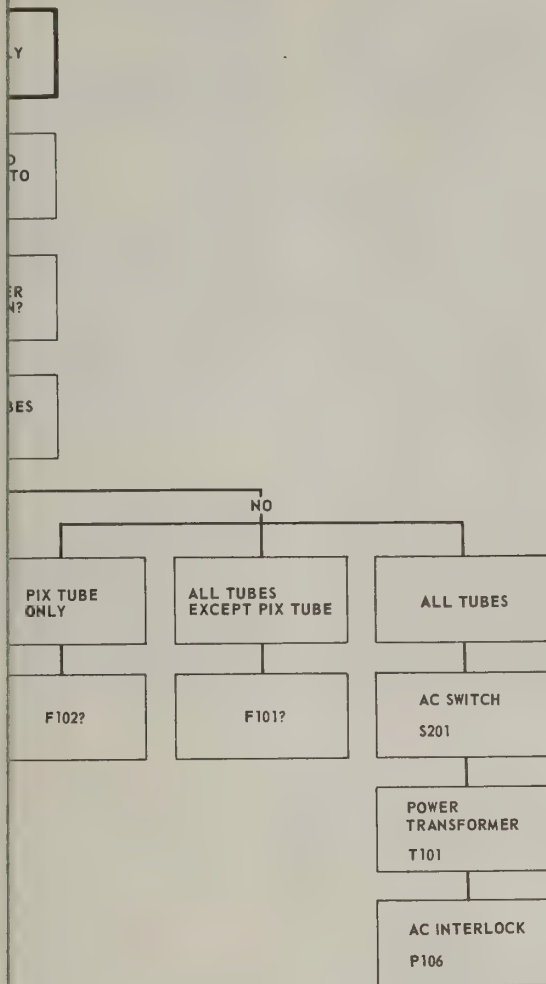
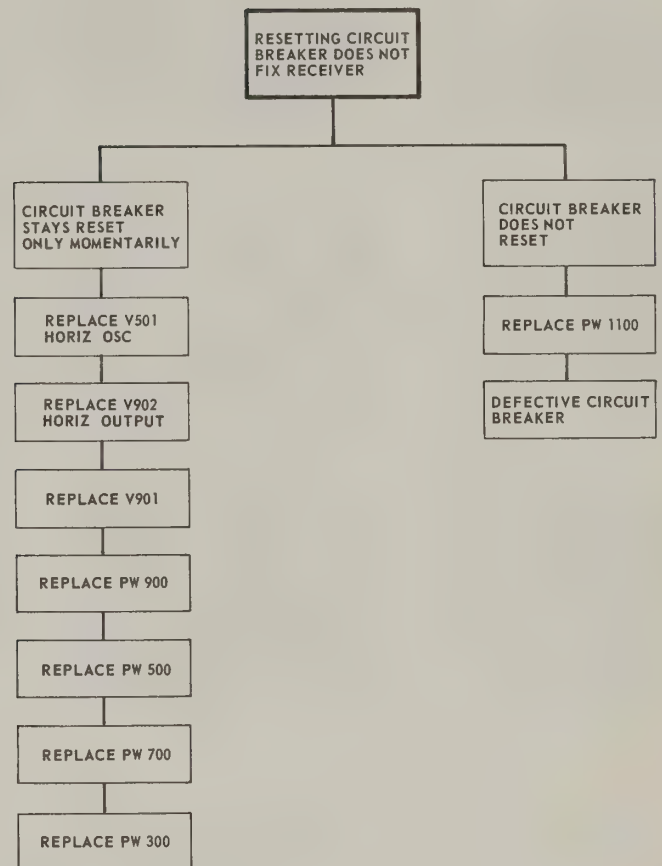


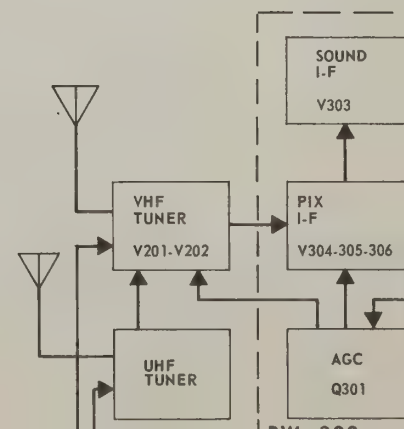
CHART NO. 3



MODULE EXCHANGE

By troubleshooting techniques
to reduce down-time in the consum-

ables, in addition many of the
FT, Convergence Assembly,



REPLACEMENT PARTS LIST (Cont'd)

MISCELLANEOUS - Continued

REF. NO.	PART NO.	DESCRIPTION
SG-301, 302 303		Part of Copper Foil on PW300 Board
SG-701, 702 703, 704 705, 706		Part of Copper Foil on PW700 Board
SG-901	28X0764-001	Spring
	30X0710-001	Female (Used as Grounding Pts. All PC Boards)
Terminals	30X0715-001	Female (Used as Receptacle for Circuit Connections on all PC Boards)
	6A0381-001	PC Board Male Plug for Wire Wrap
Test Points & Connectors	30X0701-002	Pin Test Point (TP) & P1101
	30X0703-002	Pin Bead Chain J-307, 308, 309 . .
	3A0543-002	12BY7A-6GH8A
	3A0543-003	6JC6-6GH8A
	3A0548-002	6JH6-6GM6
Tube Sockets	3A0548-001	6HZ6-6EW6
	3A0559-002	6AQ5A
	3A0560-005	6GH8A
	3A0593-001	6MF8
	3A0598-001	6KG6A-6EC4A
		(Used on Chassis T511, T512, T513, T514, T561, T562)
	7A0317-001	VHF Pilot Light (PL-201)
	7A0317-002	UHF Pilot Light (PL-202)
Sockets		(Used on Chassis T521, T522, T523, T524, T571, T572, T581, T582)
	7A0337-001	VHF Pilot Light (PL-201)
	7A0338-001	UHF Pilot Light (PL-202)
		(Used on Chassis T531, T532, T533, T534)
	7A0345-001	VHF Pilot Light (PL-201)
	7A0345-002	UHF Pilot Light (PL-202)

MISCELLANEOUS - Continued

REF. NO.	PART NO.	DESCRIPTION
	25A1282-001	VHF } Used w/Chassis T511, T513, T561
	25A1275-002	UHF }
	25A1283-001	VHF } Used w/Chassis T512, T514, T562
	25A1277-002	UHF }
	25A1282-002	VHF } Used w/Chassis T521, T523, T571, T581
	25A1275-001	UHF }
Tuners	25A1283-002	VHF } Used w/Chassis T522, T524, T572, T582
	25A1277-001	UHF }
	25A1282-003	VHF } Used w/Chassis T531, T533
	25A1275-003	UHF }
	25A1283-003	VHF } Used w/Chassis T532, T534
	25A1277-003	UHF }
		(Used on Chassis T511, T512, T513, T514, T561, T562)
Tuner Misc.	38A3996-000	Fine Tuning Gear Assembly
		(Used on Chassis T511, T512, T513, T514, T561, T562)
	38A4157-000	Tuner Bracket & Gear Assembly
VM-101	38A4148-001	High Voltage Tripler & Lead Ass'y
W-101	13X1003-007	Shielded Lead Ass'y. (Color Control)
W-102	13X1011-004	Shielded Lead Ass'y. (Tint Control)
W-103	13X1156-001	High Voltage Lead & Receptacle Ass'y. (Tripler to Horiz. Output Trans.)
W-104	13X1155-001	High Voltage Lead & Receptacle Ass'y. (Tripler to Focus Panel)
		(Used on Chassis T512, T514, T522, T524, T532, T534, T562, T572, T582)
	38A4268-000	Shielded Cable Assembly
W-201	13X1150-001	Input I-F Cable Assembly
W-301	30X0720-001	I-F Cable Retainer Clip
	38A4139-000	Shielded Cable & Socket Ass'y. (AFT)
W-1401	68X0004-002	3.58 MHz. Crystal
Y-701		

Various Terminals Used on Molex Male or Female Plugs or Connectors

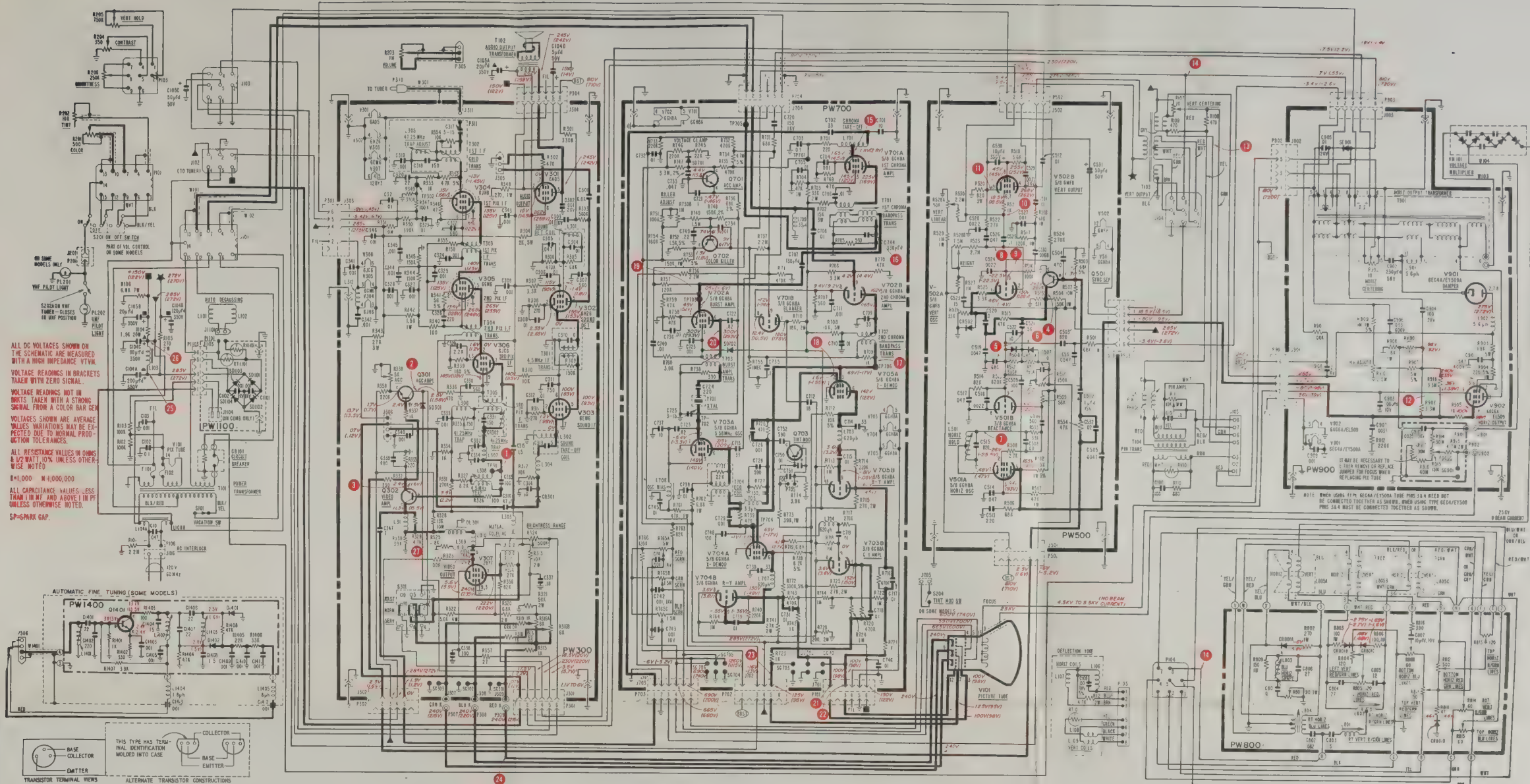
Terminal Male	30X0706-001	Used W/Shielded Cable & Soc. Ass'y. (AFT)	Terminal Male	30X0708-001	Used W/Color Control Cable Ass'y.
		Used W/Volume Control Cable Ass'y.		Cont'd.	Used W/Tuner Cable VHF
		Used W/Pilot Light Cable Ass'y. Ass'y.			Used W/Convergence Cable Ass'y.
		Used W/I-F Input Cable			Used W/Deflection Yoke
Terminal Female	30X0707-001	Used W/Shielded Cable & Soc. Ass'y. (AFT)			Used W/6 Terminal Receptacle Ass'y.
		Used W/5½" H.V. Lead & Receptacle Ass'y.			Used W/9 Terminal Receptacle Ass'y.
		Used W/Volume Control Cable Ass'y.			Used W/15 Terminal Receptacle Ass'y.
		Used W/Pilot Light Cable Ass'y. Ass'y.	Terminal Female	30X0709-001	Used W/Convergence Receptacle Ass'y.
		Used W/Convergence Cable Ass'y.			Used W/Yoke Receptacle Ass'y. Ass'y.
Terminal Male	30X0708-001	Used W/Secondary Control Plug & Lead Ass'y.			Used W/10½" H.V. Lead & Receptacle Ass'y.
		Used W/Auxiliary Control & Plug Ass'y.			Used W/Vert. Output Trans- former Ass'y.
		Used W/Tint Control Cable Ass'y.			

Used on Molex Male or Female Plugs or Connectors Pin Extracting Tools

W.G. PART NO.	MFG. PART NO.	DESCRIPTION	W.G. PART NO.	MFG. PART NO.	DESCRIPTION
67X0036-001	#HT2285	Tool (Used for Extracting 30X0708-001 & 30X0709-001 Terminals from Plastic Housing).	67X0037-001	#HT2038	Tool (Used for Extracting 30X0706-001 & 30X0707-001 Terminals from Plastic Housing).

NOTE: The above tool may be obtained from Wells-Gardner.

T5001 SERIES SCHEMATIC



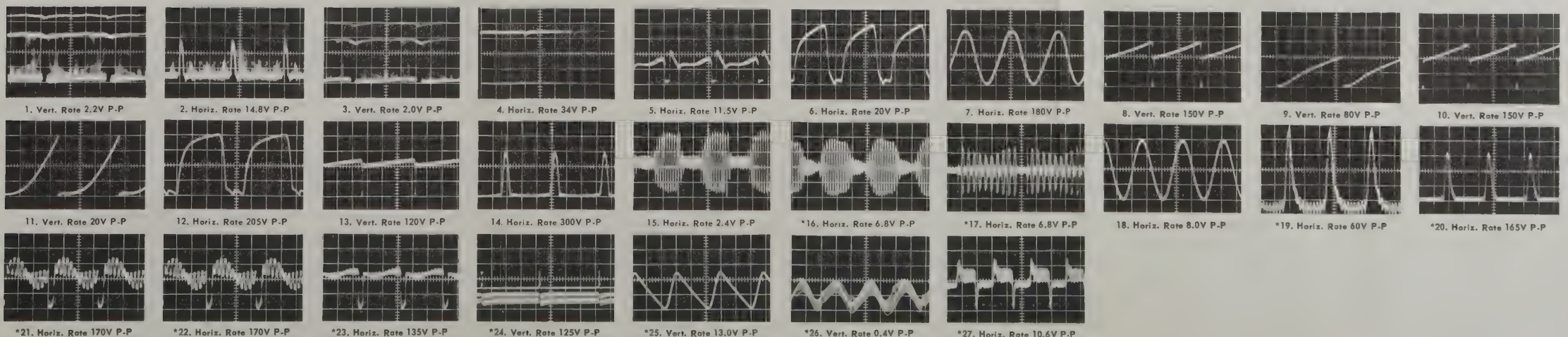
- R201 { Used on Models T511-T512-T531-T532
40X0616-002 500 Color Control, Slide
Used on Models T513-T514-T533-T534-T561-T562
40X0620-002 500 Color Control, Slide
- R202 { Used on Models T511-T512-T531-T532
40X0616-001 10K Tint Control, Slide
Used on Models T513-T514-T533-T534-T561-T562
40X0620-001 10K Tint Control, Slide
- R201 { Used on Models T521-T522-T523-T524
78X0057-007 10K Tint Control
R202 { 78X0057-007 10K Chroma Control

- R201 { Used on Models T571-T572
78X0057-010 10K Tint/Tint Mod Control
S204 { 500 Chroma Control
- R203 { Used on Models T511-T512-T531-T532
40X0616-003 1meg. Volume Control, Slide
Used on Models T513-T514-T533-T534-T561-T562
40X0620-003 1meg. Volume Control, Slide
- R203 { Used on Models T521-T522-T523-T524-T571-T572
78X0064-001 1meg. Volume Control
S201 { Switch, On-Off
Used on Models T581-T582
78X0064-003 1meg. Volume Control
Switch, On-Off

- S201 { Used on Models T511-T512-T513-T514-T531-T532-T533-T534
2A0628-001 Switch-On-Off
Used on Models T561-T562
38A4386-000 On-Off Switch & Cap Ass'y
- S203 { Used on Models T511-T512-T513-T514-T561-T562
38A4159-000 AFT Switch & Gear Ass'y
Used on Models T521-T522-T523-T524-T571-T572
2A0611-001 AFT Switch
Used on Models T531-T532-T533-T534
2A0629-001 AFT Switch
- S203 { Used on Models T581-T582
2A0635-001 AFT-Tint Mod Switch

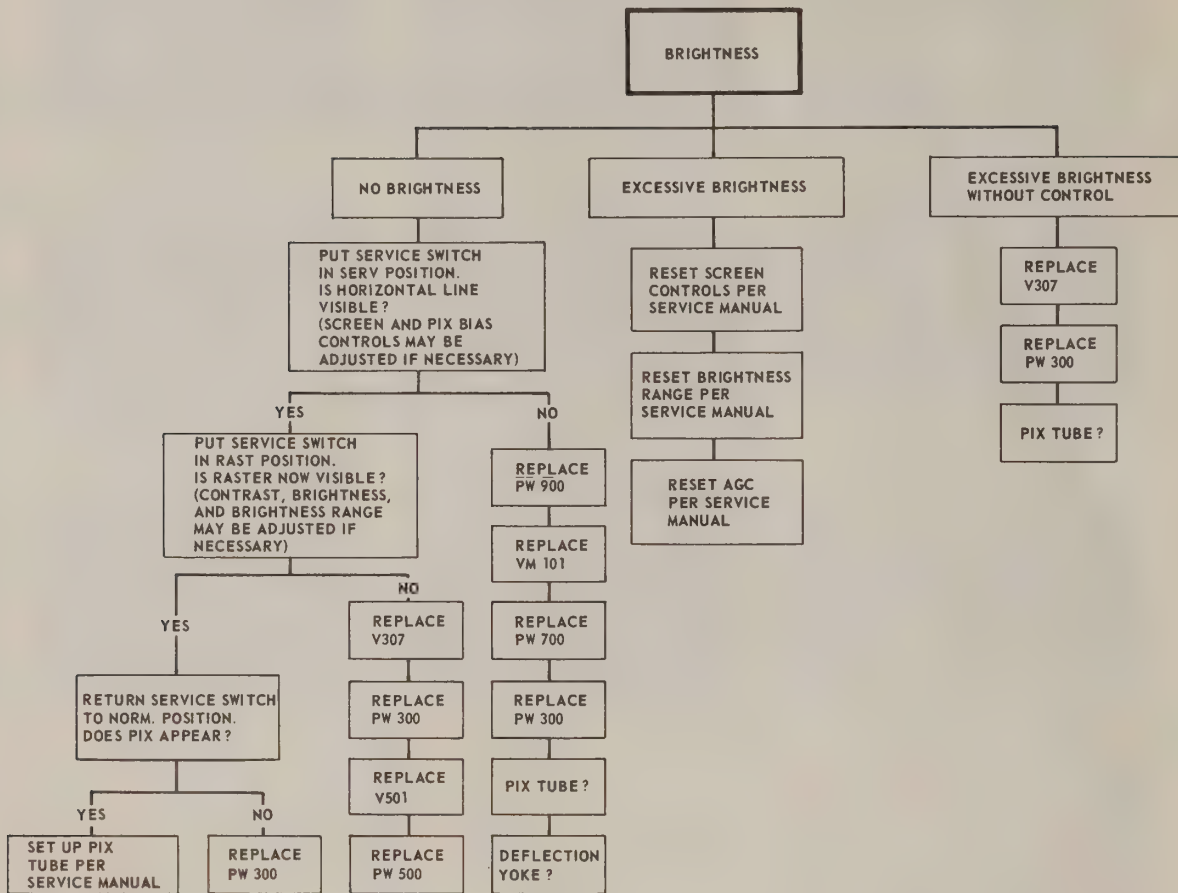
- PILOT LIGHT SOCKETS FOR VARIOUS MODELS
Used on Models T511-T512-T513-T514-T561-T562
7A0317-001 VHF Pilot Light (PL201)
7A0317-002 UHF Pilot Light (PL202)
Used on Models T521-T522-T523-T524
7A0317-001 VHF Pilot Light (PL201)
7A0317-002 UHF Pilot Light (PL202)
Used on Models T531-T532-T533-T534
7A0317-001 VHF Pilot Light (PL201)
7A0317-002 UHF Pilot Light (PL202)

CHASSIS VOLTAGE WAVEFORMS

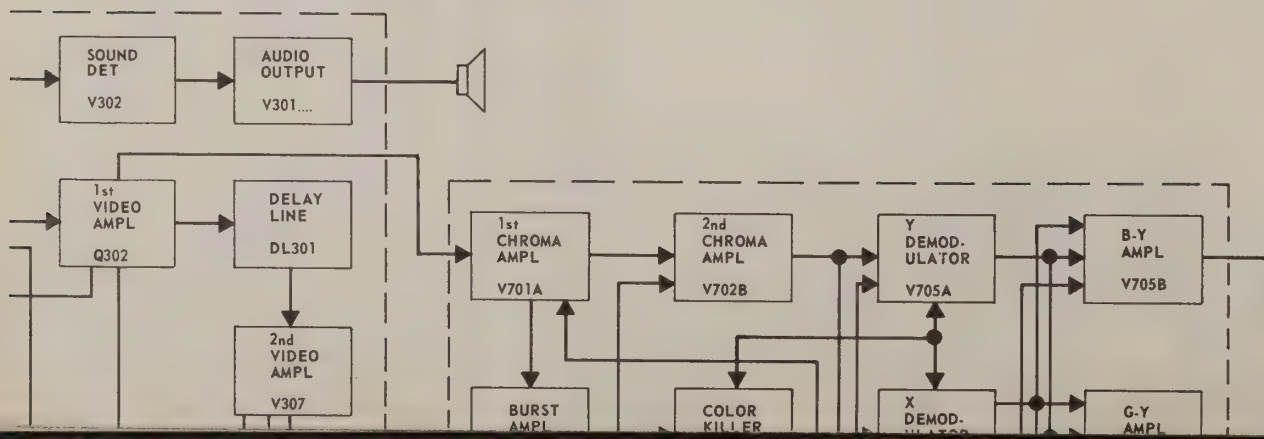


NOTE: VOLTAGE WAVEFORMS TAKEN WITH A WIDEBAND OSCILLOSCOPE USING A LOW CAPACITANCE PROBE. ALL WAVEFORMS TAKEN USING A STRONG TEST PATTERN SIGNAL EXCEPT THOSE MARKED WITH AN () TAKEN WITH A COLOR BAR GENERATOR.

CHART NO. 4



FUNCTIONAL BLOCK DIAGRAM



CABINET MISCELLANEOUS

Used on Models 6119A, 6106A, 6107A, 6111A, 6121A,
6122A, 6123A, 6124A

PART NO.	DESCRIPTION
38A4398-000	Control Panel Escutcheon Assembly
38A4208-010	Dial Assembly UHF
38A4208-009	Knob Assembly VHF
38A4208-011	Knob Assembly, UHF Tuning.
38A3000-246	Knob Assembly, Fine Tuning.
10A1183-903	Knob Assembly, Bright., Vert., Cont.
10A1169-011	Knob, On-Off Volume, AFT, Auto Tint
10A1187-019	Knob, Slide Color
10A1187-020	Knob, Slide Tint
4X2154-015	Insert, Secondary Control Ind. Strip(B.V.C.)—
50A2020-211	Antenna Block Twin Lead Assembly.

Used on Models 6106A, 6107A, 6111A, 6121A, 6122A,
6123A, 6124A

4X2220-018	Pix Mask
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Used on Model 6119A

25VBAP22	25" V Color Bonded Pix Tube.
4X2220-014	Pix Mask
14X0948-004	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover
N01B614B-030	Leg, Cabinet
25X2797-001	Leg Mounting Bracket
79X0163-002	Plastic Foot

Used on Models 6111A, 6121A, 6122A, 6123A, 6124A

25VACP22	25" V Color Banded Kimcode Pix Tube.
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Used on Models 6106A, 6107A

25VAUP22	25" V Color Bonded Pix Tube
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Used on Models 6119A, 6106A, 6107A, 6111A

12A0654-001	4" x 6" PM Speaker
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Used on Models 6121A, 6122A, 6123A, 6124A

12A0657-001	4" x 6" PM Speaker
#61-3418	Strike
#61-3308	Magnetic Catch (Used w/Strike).
#1595	Hinge (Door)
305X0411-308	Screw (Used w/Hinge)

PART NO. DESCRIPTION

Used on Models 6121A, 6122A, 6123A

14X0948-008	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover

Used on Models 6107A, 6111A

14X0957-002	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover

Used on Model 6106A

14X0948-007	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover

Used on Model 6124A

14X0948-009	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover

Used on Models 6107A, 6111A, 6122A, 6123A, 6124A

#3820A-19U0-	Caster
#E-2011	Caster Bracket

Used on Model 6107A

#5-2233/DC1640	Decorative Pull
#K10728	Stud } Used w/Pull.
#K10729	Clip }

Used on Model 6121A

#DC 19688	Decorative Pull
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Used on Model 6122A

#B6383	Decorative Pull (Mounted on Door)
#K13241 }	Decorative Pull (Mounted on Cabinet Base)
#K13242 }	
#K10728	Stud } Used w/Pull (Cabinet Base) .
#K10729	Clip }

Used on Model 6123A

#N2140	Decorative Pull (Mounted on Door)
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Used on Model 6124A

#DC 10426	Decorative Pull (Mounted on Door)
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CHART NO. 1

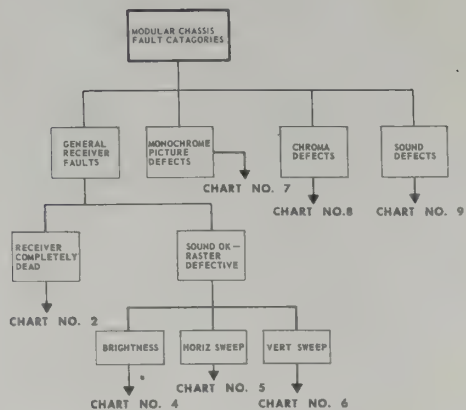


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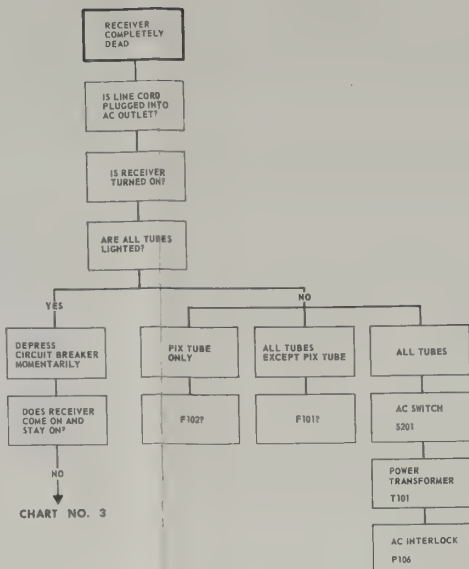


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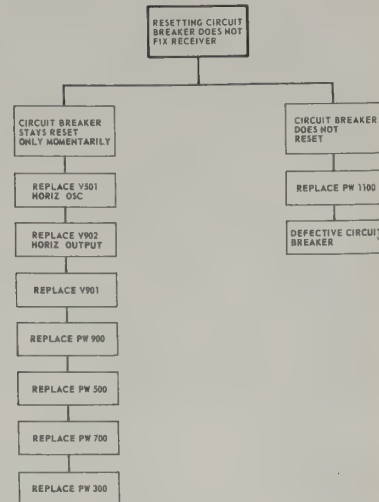
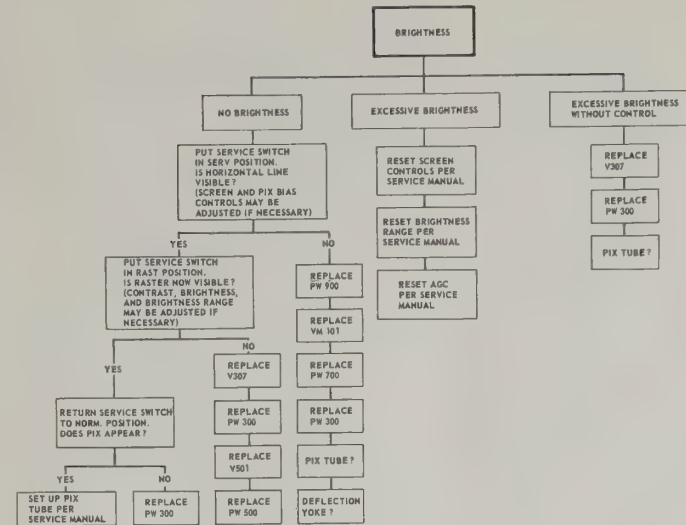


CHART NO. 4



TROUBLESHOOTING BY TUBE AND MODULE EXCHANGE

This new modular chassis allows use of new troubleshooting techniques which should expedite in-home servicing and minimize down-time in the consumer's home.

Most of the circuitry is on five plug-in modules, in addition many of the other major components (i.e.; Voltage Multiplier, AFT, Convergence Assembly, and Deflection Yoke) are plug-in and easily removed. (Don't forget to remove the four chassis bolts and slide the chassis back for easier module exchange.)

A series of troubleshooting block diagrams have been written to aid in finding the tube or module that is defective. The function of these diagrams is to direct you to the fault by a process of elimination.

As you become more familiar with this chassis, using the Functional Block Diagram and Schematic Diagram, other avenues of systematic troubleshooting will be developed by you to give your customer a better service job.

FUNCTIONAL BLOCK DIAGRAM

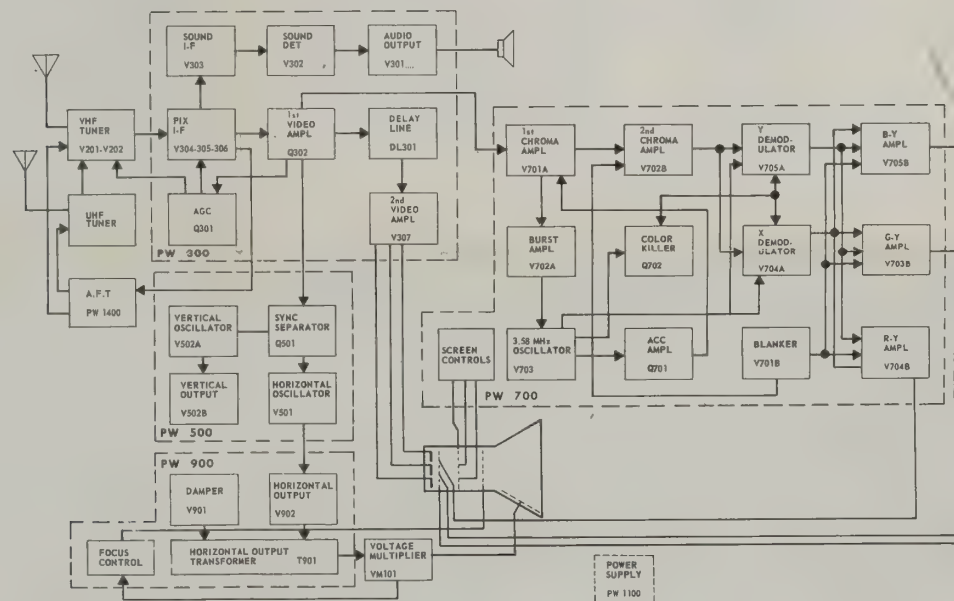


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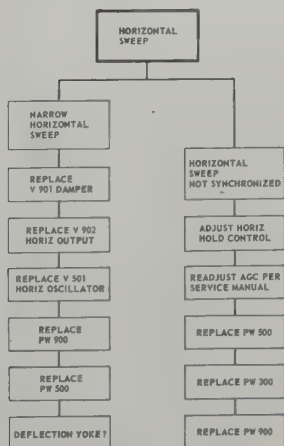


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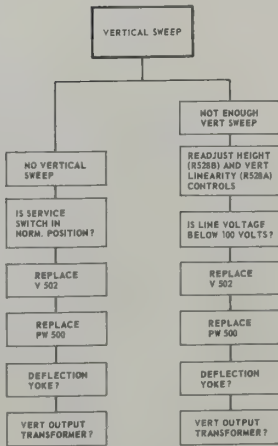


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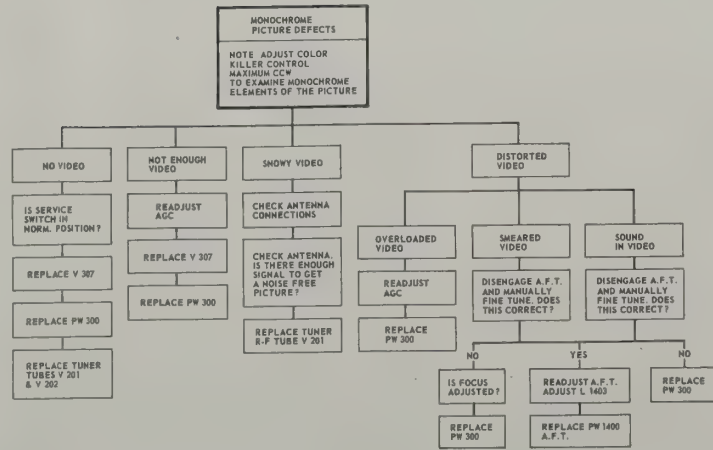


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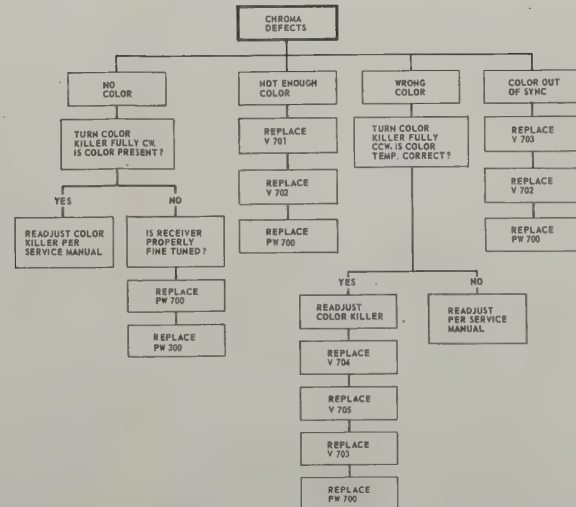
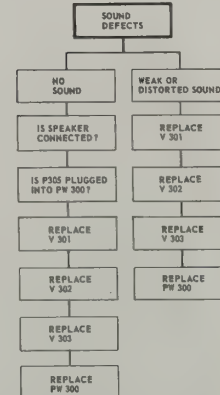


CHART NO. 9



CABINET MISCELLANEOUS

Used on Models 6119A, 6106A, 6107A, 6111A, 6121A,
6122A, 6123A, 6124A

PART NO.	DESCRIPTION
38A4398-000	Control Panel Escutcheon Assembly
38A4208-010	Dial Assembly UHF
38A4208-009	Knob Assembly VHF
38A4208-011	Knob Assembly, UHF Tuning.
38A3000-246	Knob Assembly, Fine Tuning.
10A1183-903	Knob Assembly, Bright., Vert., Cont.
10A1169-011	Knob, On-Off Volume, AFT, Auto Tint
10A1187-019	Knob, Slide Color
10A1187-020	Knob, Slide Tint
4X2154-015	Insert, Secondary Control Ind. Strip(B.V.C.)—
50A2020-211	Antenna Block Twin Lead Assembly

Used on Models 6106A, 6107A, 6111A, 6121A, 6122A,
6123A, 6124A

4X2220-018	Pix Mask
------------	--------------------

Used on Model 6119A

25VBAP22	25" V Color Bonded Pix Tube
4X2220-014	Pix Mask
14X0948-004	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover
N01B614B-030	Leg, Cabinet
25X2797-001	Leg Mounting Bracket
79X0163-002	Plastic Foot

Used on Models 6111A, 6121A, 6122A, 6123A, 6124A

25VACP22	25" V Color Banded Kimcode Pix Tube.
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Used on Models 6106A, 6107A

25VAUP22	25" V Color Bonded Pix Tube
----------	---------------------------------------

Used on Models 6119A, 6106A, 6107A, 6111A

12A0654-001	4" x 6" PM Speaker
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Used on Models 6121A, 6122A, 6123A, 6124A

12A0657-001	4" x 6" PM Speaker
#61-3418	Strike
#61-3308	Magnetic Catch (Used w/Strike)
#1595	Hinge (Door)
305X0411-308	Screw (Used w/Hinge)

PART NO. DESCRIPTION

Used on Models 6121A, 6122A, 6123A

14X0948-008	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover

Used on Models 6107A, 6111A

14X0957-002	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover

Used on Model 6106A

14X0948-007	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover

Used on Model 6124A

14X0948-009	Cabinet Back-Less Tube Cover
57X0275-001	Tube Cover

Used on Models 6107A, 6111A, 6122A, 6123A, 6124A

#3820A-19U0-	Caster
#E-2011	Caster Bracket

Used on Model 6107A

#5-2233/DC1640	Decorative Pull
#K10728	Stud } Used w/Pull.
#K10729	Clip }

Used on Model 6121A

#DC 19688	Decorative Pull
-----------	---------------------------

Used on Model 6122A

#B6383	Decorative Pull (Mounted on Door)
#K13241 }	Decorative Pull (Mounted on Cabinet Base)
#K13242 }	
#K10728	Stud } Used w/Pull (Cabinet Base) .
#K10729	Clip }

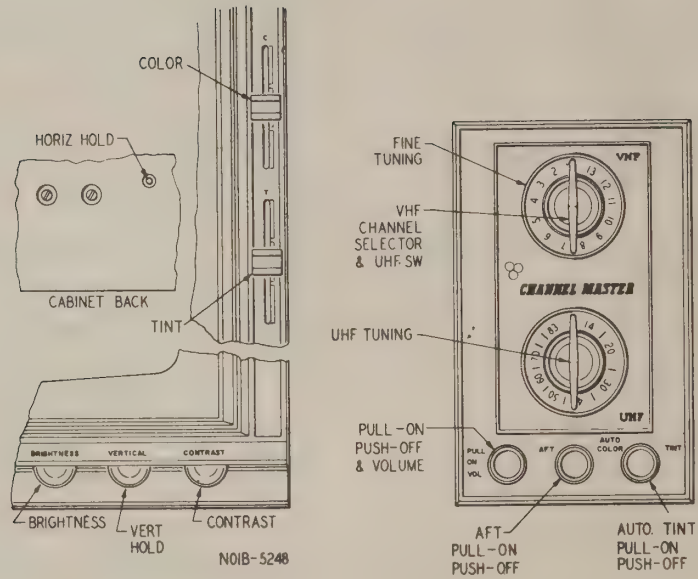
Used on Model 6123A

#N2140	Decorative Pull (Mounted on Door)
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Used on Model 6124A

#DC 10426	Decorative Pull (Mounted on Door)
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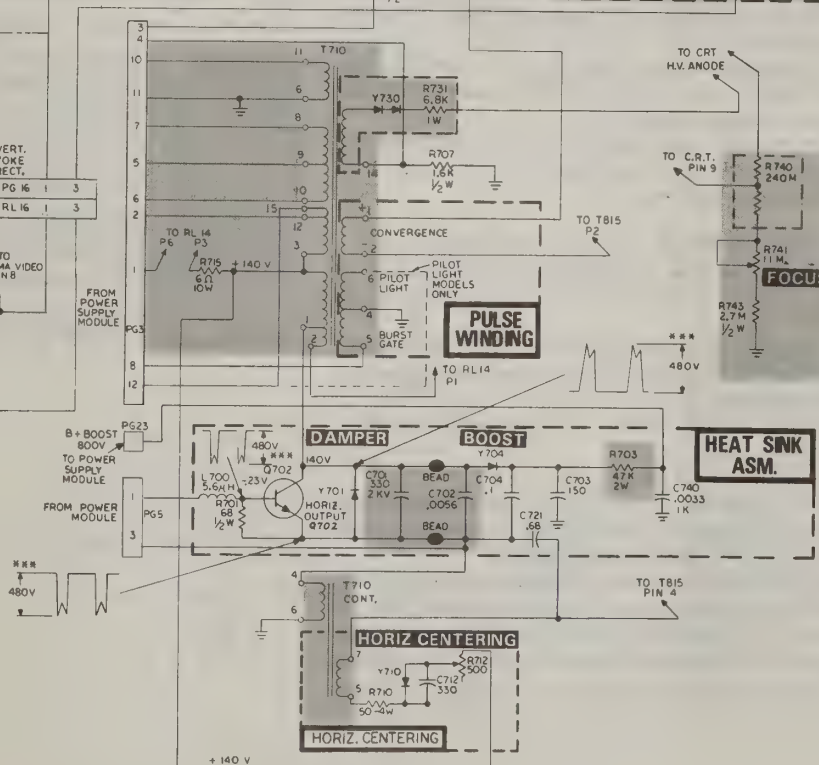
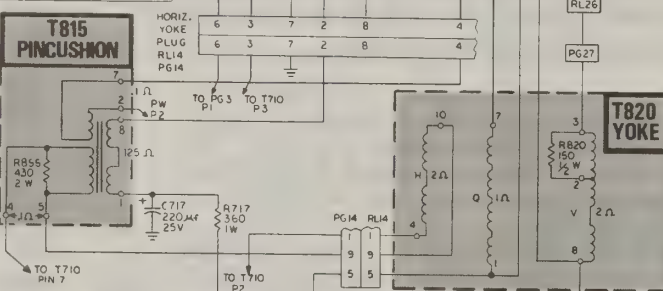
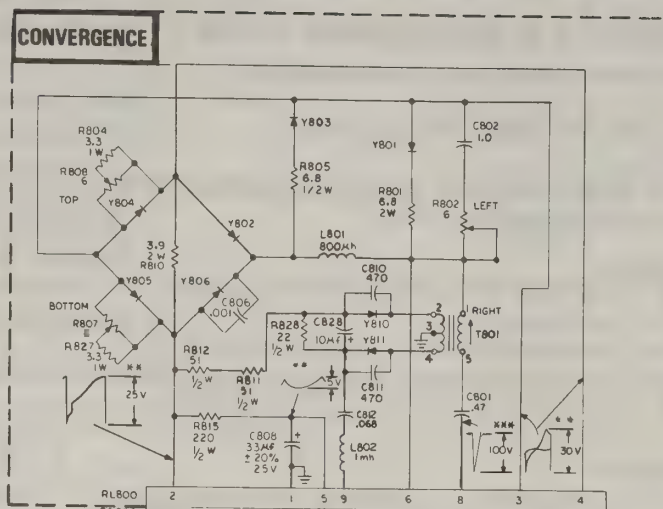
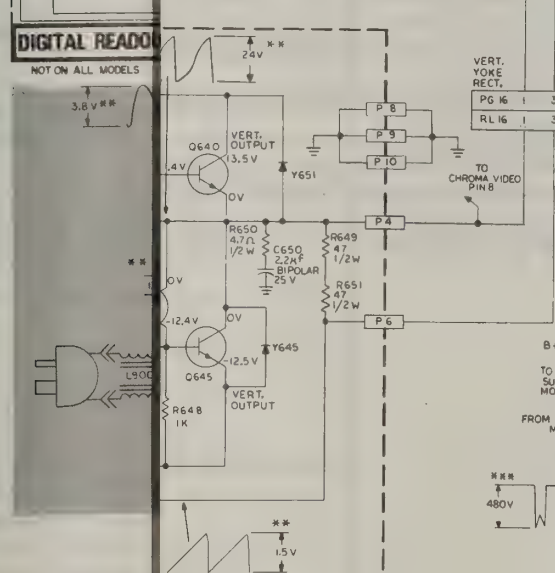
CONTROL PANEL



SERVICE DEPARTMENT **CHANNEL MASTER**

Division of AVNET, Inc.

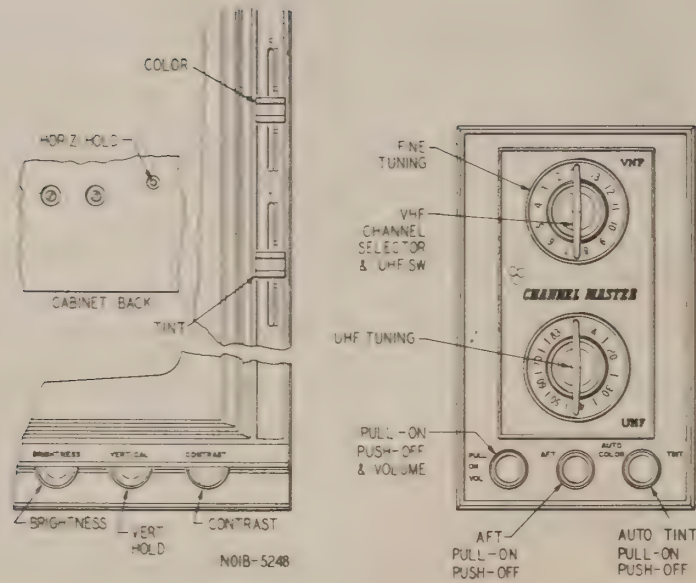
ELLENVILLE N.Y. 12428



YC-2 CHASSIS

TECHNICAL INFORMATION

CONTROL PANEL



SERVICE DEPARTMENT **CHANNEL MASTER**

Division of AVNET, Inc.

ELLENVILLE N.Y. 12428

YC-2 CHASSIS

TECHNICAL INFORMATION

FOR USE OF QUALIFIED TECHNICIANS ONLY

ADJUSTMENT PROCEDURE

HIGH VOLTAGE
Normal high voltage is approximately 29.5KV at zero beam (black picture) with 120VAC line input. Not adjustable.

AGC ADJUSTMENT

1. Tune in a strong station. Set Picture control to mid position and Brightness control for normal viewing.
2. Set IF-AGC to mid position. This is normally the optimum setting for this control.
3. Turn RF-AGC control fully CW. Then turn CDW slowly out of overload into sight norm. Continue CDW until norm just disappears.

AFC ADJUSTMENT

1. Tune in a strong color signal. Turn any Automatic or AFC switches to OFF. Fine tune for best picture detail.
2. Turn the Automatic or AFC switches ON and note any changes in picture detail. If necessary, adjust L121 so that picture detail is the same as when AFC was OFF. Check all channels.

GREY SCALE AND BRIGHTNESS RANGE

1. Tune in a color picture. Set the Brightness, Picture, Color, Sharpness, Brightness Range and CRT Screen controls fully CDW.
2. Short TP405 on CRT Module to chassis ground. One at a time, turn each Screen control CW until the screen lights. Then turn it CDW until the screen just goes dark.
3. Remove the short from TP405. Turn the Brightness Range control full CW. Turn the Brightness control CW until the screen just lights. If necessary, adjust the Screen controls for grey scale in the low brightness areas of the picture.
4. Turn the Brightness and Picture controls up for a normal brightness picture. Adjust the Drive control of the predominant color for best grey scale in the high brightness areas.
5. Turn the Brightness control fully CW and the Picture control fully CDW. Turn the Brightness Range control fully CDW, then turn it CW until the picture is slightly washed out.

CHROMA ADJUSTMENTS: COLOR KILLER, TINT RANGE

1. Tune in a color bar signal. Turn the Color control to maximum. Set the Tint control to mechanical center. Turn any automatic switches to OFF.
2. Turn the Color Killer control fully CDW and short TP202 to chassis ground. Turn the Color Killer CW slowly until color information is present in the picture.
3. Adjust crystal frequency (C220) to cause the bars to stop or float slowly.
4. Remove the short from TP202.
5. Tune to an unused UHF channel. Turn the Color Killer control fully CW. Then turn the control slowly CDW until you have colored snow. Then turn it CW until colored snow just disappears.
6. Return to a color bar or broadcast color signal. Adjust the Tint Phase Coil (L220) for proper flesh tone or color bar sequence. Check the range of the Tint control on a broadcast signal. If necessary, adjust the Tint Range (P226) control so that the Tint control will cause flesh tones to be green at one end and magenta at the other end of its range.

IMPORTANT - SAFETY INFORMATION

THE CHASSIS OF THIS RECEIVER IS CONNECTED TO ONE SIDE OF THE AC LINE. USE AN ISOLATION TRANSFORMER TO POWER THE RECEIVER WHILE PERFORMING SERVICE.

THE RECEIVER IS EQUIPPED WITH A POLARIZED POWER CORD TO INSURE THAT THE CHASSIS IS ALWAYS CONNECTED TO THE GROUNDED SIDE OF THE AC LINE. DEFEATING THIS SAFETY DEVICE MAY CREATE A POTENTIAL HAZARD TO THE SERVICER AND THE USER.

SHATTER-PROOF SAFETY GLASSES SHOULD ALWAYS BE WORN WHEN WORKING AROUND AN EXPOSED PICTURE TUBE. BEFORE HANDLING THE TUBE, THOROUGHLY DISCHARGE THE SECOND ANODE TO THE OUTER AQUADAG COATING OF THE PICTURE TUBE. REPLACEMENT PICTURE TUBES MUST HAVE INTEGRAL X-RAY AND IMPLSION PROTECTION. REPLACE ONLY WITH TUBE OF SAME TYPE NUMBER.

BEFORE INSTALLING THE CABINET BACK:

A. INSPECT LEAD DRESS:

1. No lead should be against a power resistor (2 watts or more).
2. High voltage connections must have no sharp points.
3. The insulation on antenna leads should not be damaged. The leads should not be dressed close to any high voltage point or AC line connection.
4. The AC wiring should be inspected for damaged insulation, frayed wires, pinched leads, or cold solder connections.
5. Inspect the AC line cord for broken or damaged insulation.

B. MAKE RESISTANCE CHECK:

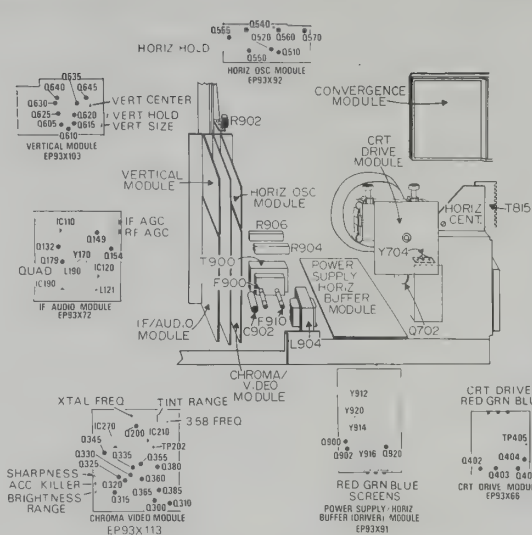
1. Check for DC continuity (0 ohms) from the large blade of the power cord to the chassis with the ON-OFF switch in the OFF position.

AFTER INSTALLING THE CABINET BACK:

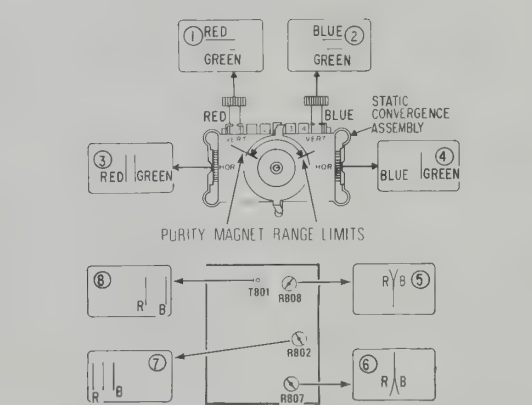
- A. Connect the VHF antenna to the VHF antenna terminals.
- B. Do not plug the receiver into a power outlet. Connect both blades of the power plug together and place the ON-OFF switch in the ON position.
- C. Measure between the shorted power plug and the following points. Readings should be as indicated.

TEST POINT	MIN. OHMS	MAX. OHMS
ANTENNA TERMINALS - UHF	600K	4.4 MEGS
ANTENNA TERMINALS - VHF	600K	4.4 MEGS
CABINET BACK SCREWS		OPEN CIRCUIT
A-L METAL CONTROL OR CHANNEL SELECTOR SHAFTS (WITH KNOBS REMOVED)		OPEN CIRCUIT
ALL NON-REMOVABLE METALLIC KNOBS, PUSH BUTTONS, EARPHONE JACKS, ETC.		OPEN CIRCUIT
METAL ESCUTCHEONS AND OVERLAYS		OPEN CIRCUIT
METAL HANDLES		OPEN CIRCUIT

IF ANY READING IS OUTSIDE LIMITS SPECIFIED, THE CAUSE SHOULD BE IDENTIFIED AND CORRECTED BEFORE OPERATING THE RECEIVER.



CHASSIS LAYOUT

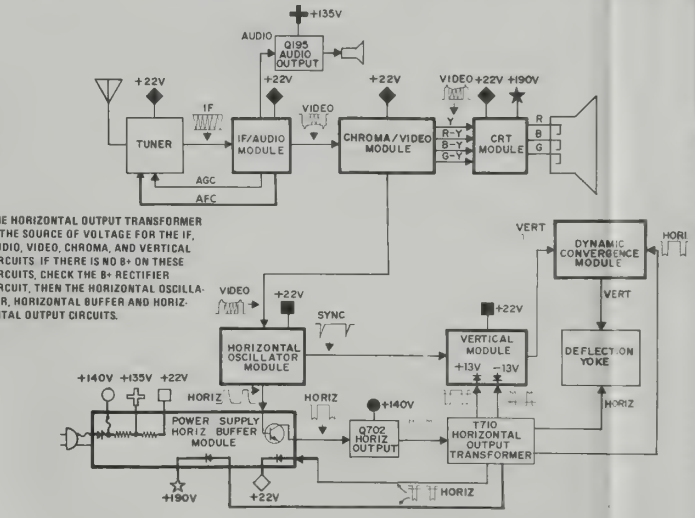


GREEN GUN IS IN CENTER AND REQUIRES NO CONVERGENCE. CONVERGE BLUE AND RED ON GREEN.

CONVERGENCE ADJUSTMENTS

SYMPTOM	POSSIBLE CAUSE	CAT. NO.	TROUBLESHOOTING PROCEDURE
No Raster/No Audio	- F900 4 amp Fast Blow - F910 1/2 amp Fast Blow - Y912 B+ Rectifier - Located on Power Supply Module	EP10X19 EP10X27 EP57X4	Check Fuses. Check Y912 for shorts. Unplug 2-pin yoke plug (PG16/RL16) and 9 pin convergence board plug (PG800/RL800). Install new fuse. Apply power. If fuse holds, replace yoke, if fuse blows, leave plugs disconnected and unplug Vertical Module. Install new fuse. Apply power. If fuse holds, trouble is on Vertical Module.
No Vertical Sweep or Partial Vertical Sweep	- Vertical Module	EP93X103	Substitute Vertical Module. If problem is corrected, module is bad.
No Video, Dim Raster (looks like bad CRT because beam is deflected off screen due to a vertical fault) Audio OK	- Vertical Module	EP93X103	Substitute Vertical Module. If problem is corrected, module is bad.
Excessive Brightness (Can't control with Brightness control)	- CRT Module	EP93X66	Substitute CRT Module. If problem is corrected, module is bad.
Insufficient Brightness	- CRT Module	EP93X66	Substitute CRT Module. If problem is corrected, module is bad.
No Color	- Chroma/Video Module contacts dirty. Clean contacts with EP90X11 spray cleaner then reinsert module. - R241 Color Killer misadjusted - Chroma/Video Module	EP93X113	Carefully reinsert module so as not to damage interconnect board. For adjustment procedure, see "Intermittent Color". Substitute Chroma/Video Module. If problem is corrected, module is bad.
Missing Colors (Abnormal grey scale)	- CRT Module	EP93X66	Substitute CRT Module. If problem is corrected, module is bad.
Missing Color (Normal grey scale)	- Chroma/Video Module	EP93X113	Substitute Chroma/Video Module. If problem is corrected, module is bad.
Color Sync or Tint Range Problems	- Poor solder connection on C220		Tune to an unused UHF channel, then turn the Color Killer CDW until the picture suddenly exhibits color noise. Rotate the Color Killer CW until the color just disappears.
Intermittent Color	- R241 Color Killer misadjusted - Chroma/Video module contacts dirty. Clean contacts with EP90X11 spray cleaner then reinsert module.		Carefully reinsert module so as not to damage interconnect board.
Snowy picture	- R138 RF AGC control misadjusted - IF/Audio Module - VHF Tuner	EP93X72	Substitute IF/Audio Module. If problem is corrected, module is bad. See no. on tuner. Tuner has plugs. Can easily be substituted.
No Video, No	- IF/Audio Module contacts dirty. Clean contacts with EP90X11 spray cleaner then reinsert module. - IF/Audio Module	EP93X72	Substitute IF/Audio Module. If problem is corrected, module is bad.

SYMPTOM	POSSIBLE CAUSE	CAT. NO.	TROUBLESHOOTING PROCEDURE
No Video/ Audio OK	- Chroma/Video module contacts dirty. Clean contacts with EP90X11 spray cleaner then reinsert module. - Poor solder connections at module socket on Chroma/Video module. Check and resolder, especially pin 18. - Chroma/Video Module	EP93X113	Carefully reinsert module so as not to damage interconnect board. Look for cold solder connections at module socket on Chroma/Video module. Substitute Chroma/Video module. If problem is corrected, module is bad.
No Audio or Distorted Audio Video OK	- IF/Audio Module	EP93X72	Substitute IF/Audio module. If problem is corrected, module is bad.
No Sync	- Poor solder connection at pin 18 of socket on Chroma/Video Module or broken copper pattern to base of Q310 - Horizontal Osc. module contacts dirty. Clean contacts with EP90X11 spray cleaner then reinsert module. - Horizontal Oscillator Module	EP93X92	Substitute Horiz. Osc. Module. If problem is corrected, module is bad.
Horizontal Sync	- Horizontal osc. module contacts dirty. Clean contacts with EP90X11 spray cleaner then reinsert module. - Horizontal Oscillator Module	EP93X92	Substitute Horiz. Osc. Module. If problem is corrected, module is bad.
No Raster, No Audio - Fuses OK	- Horizontal Oscillator Module	EP93X92	Substitute Horiz. Osc. Module. If problem is corrected, module is bad.



BLOCK DIAGRAM

CAT NO	SYMBOL	DESCRIPTION	CAT NO	SYMBOL	DESCRIPTION	CAT NO	SYMBOL	DESCRIPTION
RESISTORS			DIODES (Continued)			MODULES		
EP14X165	R213	75 ohm, 5%, 1W	EP15X11	Y701	Silicon, Damper	EP93X113		Chroma Video
EP14X85	R642	33 ohm, 5%, 2W	EP15X11	Y704	Silicon, Buffer	EP93X171		Converter Board
EP14X87	R703	47K, 5%, 2W	EP57X5	Y710	Silicon, Horiz. Centering	EP93X104		Converter
EP14X88	R710	50 ohm, 10%, 5W	EP57X5	Y712	Silicon, Horiz. Centering	EP93X66		CRT Socket
EP62X87	R740	Focus Resistor, 240M	Prd. 17710	Y730	Silicon, Rectifier, HV	EP93X92		Horizontal Osc. Board
EP14X115	R855	410, 2W	EP15X74	X801	Silicon, Convergence	EP93X72		IF Audio
EP14X113	R802	Depanning	EP57X4	X802	Silicon, Convergence	EP93X91		Power Supply Buffer
EP14X9	R904	2 ohm, 5%, 15W	EP57X4	X803	Silicon, Convergence	EP93X103		Vertical
EP14X159	R906	1.5K, 10%, 15W	EP57X4	X804	Silicon, Convergence	MISCELLANEOUS		
EP14X89	R908	750 ohm, 5%, 2W	EP57X4	X805	Silicon, Convergence	EP93X1		ANODE CONNECTOR-CRT
EP14X6	R920	160 ohm, 5%, 2W	EP57X4	X806	Silicon, Convergence	EP8X23		CONNECTOR-No. 24, 2Pin
EP14X103	R922	10K, 5%, 1W	EP15X74	X912	Silicon, B- Rectifier	EP10X19		FUSE-A-AMP 250V, Fast Blow, Snap-In, F900
EP14X43	R926	1K, 7W, 10%	EP57X5	X914	Silicon, B- Rectifier	EP10X27		Fuse 1A-AMP, 250V, Fast Blow, Snap-In, F910
POTENTIOMETERS			EP15X27	X915	Silicon, Bias	EP93X23		SOCKET-G702
EP43X249	R741	Focus, 1M, meg.	EP15X27	X916	Zener, 22V			
CAPACITORS			EP57X5	X920	Silicon, Scan Rectifier			
EP18X91	C701	330pF, 20%, 2KV	EP57X27	X922	Silicon, T510 Damping			
EP25X69	C702	0.056uF, 1.2KV, 5%						
EP20X71	C104	1uF, 10%, 24KV						
EP25X78	C902	0.047uF, 20%, 600V, Mylar						
			TRANSISTORS					
			EP15X59	Q132	NPN, AF-AGC Amplifier			
			EP15X54	Q149	NPN, 2nd IF			
			EP15X54	Q154	NPN, 4th IF			
			EP15X56	Q198	NPN, 1st Video IF Follower			
			EP15X16	Q199	NPN, Audio Output			
			EP51X90	Q200	PNP, 3.58MHz Amplifier			
			EP51X91	Q230	NPN, 3.58MHz Amplifier			
			EP51X90	Q240	ICCF Amplifier			
			EP15X5	Q280	NPN, Chroma Averaging Amp			
			EP15X9	Q282	NPN, R-Y Stabilizing			
			EP15X9	Q284	NPN, R-Y Stabilizing			
			EP15X9	Q290	NPN, Brightness Tracking			
			EP51X1	Q295	NPN, DC Restorer			
			EP15X10	Q300	NPN, 1st Video Amplifier			
			EP51X9	Q305	NPN, 2nd Video Follower			
			EP15X10	Q310	NPN, Sync E-Follower			
			EP51X48	Q315	PNP, 2nd Video Amplifier			
			EP15X3	Q320	NPN, 3rd Video Diff. Amp			
			EP15X5	Q325	NPN, 3rd Video Amplifier			
			EP15X3	Q330	NPN, 3rd Video Diff. Amp			
			EP15X5	Q335	NPN, 3rd Video Amplifier			
			EP15X5	Q345	NPN, 3rd Video E-Follower			
			EP15X5	Q355	NPN, Picture Control			
			EP51X48	Q360	PNP, Brightness Limiting			
			EP15X6	Q365	NPN, Brightness Limiting			
			EP51X90	Q380	PNP, Blanking Amplifier			
			EP15X48	Q385	NPN, 3rd Video Kick Amp			
			EP15X18	Q401	NPN, Blue Output			
			EP15X18	Q402	NPN, Red Output			
			EP15X18	Q403	NPN, Green Output			
			EP15X60	Q404	PNP, V-Drv Driver			
			EP15X18	Q410	NPN, V-Drv Gate			
			EP15X19	Q520	NPN, Sync Clapper			
			EP15X50	Q540	NPN, AFC Sawtooth Gen			
			EP15X1	Q550	NPN, Horiz. Reactance			
			EP15X1	Q555	NPN, Horiz. Oscillator			
			EP51X9	Q560	NPN, Horiz. Pulse Gen			
			EP15X56	Q570	NPN, Horiz. Pulse Gen			
			EP15X56	Q605	NPN, Vert. Oscillator			
			EP51X90	Q610	NPN, Vert. Oscillator			
			EP15X1	Q615	NPN, Vert. Sawtooth Gen			
			EP15X6	Q620	NPN, V-Vert. Diff. Amp			
			EP15X1	Q625	NPN, V-Vert. Diff. Amp			
			EP15X53	Q630	PNP, Vertical Amplifier			
			EP15X53	Q635	PNP, Vertical Phase Inverter			
			EP15X50	Q640	NPN, Vertical Output			
			EP15X50	Q645	NPN, Vertical Output			
			EP15X54	Q702	NPN, Horiz. Output			
			EP15X11	Q900	NPN, 22V Regulator			
			EP15X1	Q902	NPN, 22V Current Limiter			
			EP15X19	Q920	NPN, Horiz. Buffer			
			INTEGRATED CIRCUITS					
			EP84X10	IC110	IF/AGC			
			EP84X5	IC120	AFC			
			EP84X2	IC190	Audio			
			EP84X12	IC210	Chroma Processor			
			EP84X3	IC270	Chroma Demodulator			
			PARTS ORDERING INFORMATION					
			To order parts, see your local General Electric					
			Television Parts Distributor or contact General					
			Electric Co., Replacement Parts Center at nearest					
			location listed below. Be sure to mention part					
			description, receiver, serial number on back of					
			receiver and part catalog number if available.					
			401 Tukwila Parkway					
			Seattle, Washington 98188					
			Phone: 206-575-2700					
			East Windsor, Ct. 06081					
			Phone: (203) 623-8281					
			P O Box 50015					
			San Jose, California 95150					
			Phone: (408) 264-3602					
			P O Box 5001					
			Carrollton, Texas 75006					
			Phone: (214) 245-1521					
			6735 South Harlem					
			Chicago, Illinois 60638					
			Phone: (312) 496-6298					
			P O Box 50117					
			Atlanta, Georgia 30302					
			Phone: (404) 351-0220					
			3333 Penny Dr. E					
			Landsburg, Maryland 20785					
			Phone: (301) 772-6444					
			5390 E. 39th Avenue					
			Denver, Colorado 80220					
			Phone: (303) 320-3321					
			SERVICE MANUALS					
			Order service manuals from General Electric Co.					
			P O Box 500					
			New Concord, Ohio 43101					
			Be sure to give the service number of your receiver					
			For information on other General Electric technical					
			publications, service aids and parts programs, contact					
			General Electric Co.					
			Product Service					
			Dept. MM					
			College Blvd.					
			Portsmouth, Va. 23705					
			735260825-1					
			*DENOTES ELECTROLYTIC CAPACITORS					

EDURE

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CAT. NO. SYMBOL DESCRIPTION

RESISTORS — SPECIAL

EP14X165	R313	75 ohm, 5%, 1/4W
EP14X85	R642	.39 ohm, 5%, 2W
EP14X87	R703	47K, 5%, 2W
EP14X88	R710	50 ohm, 10%, 5W
EP62X87	R740	Focus Resistor, 240M
EP14X115	R855	430. 2W
EP14X113	R902	Degaussing
EP14X9	R904	2 ohm, 5%, 15W
EP14X159	R906	1.6K, 10%, 15W
EP14X89	R908	750 ohm, 5%, 3W
EU14X6	R920	160 ohm, 5%, 2W
EP14X103	R922	10K, 5%, 1/4W
EP14X43	R926	1K, 7W, 10%

POTENTIOMETERS

EP49X249	R741	Focus, 11 meg.
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CAPACITORS

EP18X91	C701	330pf, 20%, 2KV
EP25X69	C702	.0056uf, 1.2KV, 5%
EP20X21	C704	.1uf, 10%, 2.4KV
EP25X28	C902	.047uf, 20%, 600V, Mylar

	C904A *	400uf, 175V
EP31X57	C904B *	300uf, 175V
	C904C *	10uf, 160V
EP31X61	C918 *	22uf, 35V
EP31X25	C922 *	10uf, 350V

COILS & TRANSFORMERS

EP36X57	L900	Choke—Filter, 3.2 - 4.1MHz
EP36X154	L902	Coil—Degaussing
EP63X13	L904	Filter Reactor
EP64X31	T195	Transformer—Audio Output
EP77X33	T710	Transformer—HV, w/Y730
EP36X163	T710A	Transformer—Pulse Winding
EP36X166	T815	Pincushion Assembly
EP76X21	T820	Yoke—Deflection
EP64X32	T900	Transformer—Filament

DIODES

EP41X10	X200	Crystal, 3.58MHz
EP16X3	Y170	Germanium, Video Detector
EP16X3	Y183	Germanium, 4.5MHz Detector
EP16X3	Y184	Germanium, 4.5MHz Detector
ES16X27	Y200	Silicon, Chroma Burst Gate
ES16X27	Y210	Silicon, Pulse Limiting
ES16X27	Y215	Silicon, Tint Control Bias
ES16X27	Y282	Silicon, Isolation
ES16X27	Y284	Silicon, Isolation
ES16X27	Y290	Silicon, Coupling
ES16X27	Y295	Silicon, Reference
ES16X27	Y345	Silicon, DC Restoration
ES16X27	Y360	Silicon, Picture Control Coupling
ES16X27	Y372	Silicon, Picture Control Coupling
ES16X27	Y380	Silicon, Q380 Bias
ES16X27	Y345	Silicon, DC Restoration
ES16X27	Y380	Silicon, Q380 Bias
ES16X27	Y383	Silicon, Pulse Limiting
EU16X11	Y401	Silicon, Arc Protection
EU16X11	Y402	Silicon, Arc Protection
EU16X11	Y403	Silicon, Arc Protection
EU16X11	Y404	Silicon, Arc Protection
EU16X11	Y405	Silicon, Arc Protection
EU16X11	Y406	Silicon, Arc Protection
EU16X11	Y408	Silicon, Arc Protection
ES16X27	Y504	Silicon, Noise Gate
ES16X27	Y506	Silicon, Noise Gate
ES16X27	Y520	Silicon, Sync Gate
ES16X27	Y525	Silicon, Sync Bias
ES16X27	Y530	Silicon, Horiz. AFC
ES16X27	Y532	Silicon, Horiz. AFC
ES16X27	Y560	Silicon, Horiz. Coupling
EP16X22	Y620	Silicon, Clamping
EP16X22	Y630	Silicon, Bias Coupling
EP57X5	Y642	Silicon, Scan Rectifier
EU16X11	Y645	Silicon, Vertical Damper
EP57X5	Y646	Silicon, Scan Rectifier

*DENOTES ELECTROLYTIC CAPACITORS

CAT. NO. SYMBOL DESCRIPTION

DIODES (Continued)

EP16X11	Y701	Silicon, Damper
EP16X24	Y704	Silicon, Boost
EP57X5	Y710	Silicon, Horiz. Centering
EP57X5	Y712	Silicon, Horiz. Centering
Pt. of T710	Y730	Silicon, Rectifier, HV
EP57X4	Y801	Silicon, Convergence
EP57X4	Y802	Silicon, Convergence
EP57X4	Y803	Silicon, Convergence
EP57X4	Y804	Silicon, Convergence
EP57X4	Y805	Silicon, Convergence
EP57X4	Y806	Silicon, Convergence
EP57X4	Y912	Silicon, B+ Rectifier
EP57X5	Y914	Silicon, Scan Rectifier
ES16X27	Y915	Silicon, Bias
EP16X2	Y916	Zener, 22V
EP57X5	Y920	Silicon, Scan Rectifier
ES16X27	Y922	Silicon, T910 Damping

TRANSISTORS

EP15X9	Q132	NPN, RF AGC Amplifier
EP15X54	Q149	NPN, 3rd IF
EP15X54	Q154	NPN, 4th IF
EP15X6	Q179	NPN, 1st Video E. Follower
EP15X16	Q195	NPN, Audio Output
ES15X90	Q200	PNP, 3.58MHz Amplifier
EP15X1	Q230	NPN, Sideband Amplifier
ES15X90	Q240	PNP, ACC Amplifier
EP15X5	Q280	NPN, Chroma Averaging Amp.
EP15X9	Q282	NPN, R-Y Stabilizing
EP15X9	Q284	NPN, B-Y Stabilizing
EP15X9	Q290	NPN, Brightness Tracking
EP15X1	Q295	NPN, DC Restorer
EP15X5	Q300	NPN, 1st Video Amplifier
EP15X9	Q305	NPN, Chroma E. Follower
EP15X9	Q310	NPN, Sync, E. Follower
EP15X48	Q315	PNP, 2nd Video Amplifier
EP15X3	Q320	NPN, 1/2 Video Dif. Amp.
EP15X5	Q325	NPN, 3rd Video Amplifier
EP15X3	Q330	NPN, 1/2 Video Dif. Amp.
EP15X5	Q335	NPN, 2nd Video E. Follower
EP15X6	Q345	NPN, 3rd Video E. Follower
EP15X5	Q355	NPN, Picture Control Amp
EP15X48	Q360	PNP, Brightness Limiting
EP15X6	Q365	NPN, Brightness Limiting
ES15X90	Q380	PNP, Blanking Amplifier
EP15X48	Q385	PNP, Brightness Track. Amp.
EP15X18	Q401	NPN, Blue Output
EP15X18	Q402	NPN, Red Output
EP15X18	Q403	NPN, Green Output
EP15X60	Q404	PNP, Video Driver
EP15X1	Q510	NPN, Noise Gate
EP15X9	Q520	NPN, Sync Clipper
EP15X8	Q540	NPN, AFC Sawtooth Gen
EP15X1	Q550	NPN, Horiz. Reactance
EP15X1	Q555	NPN, Horiz. Oscillator
EP15X9	Q560	NPN, 1/2 Horiz. Pulse Gen.
EP15X6	Q570	NPN, 1/2 Horiz. Pulse Gen.
EP15X2	Q605	NPN, 1/2 Vert. Oscillator
ES15X90	Q610	PNP, 1/2 Vert. Oscillator
EP15X1	Q615	NPN, Vert. Sawtooth Gen.
EP15X6	Q620	NPN, 1/2 Vert. Dif. Amp.
EP15X1	Q625	NPN, 1/2 Vert. Dif. Amp.
EP15X53	Q630	PNP, Vertical Amplifier
EP15X53	Q635	PNP, Vertical Phase Inverter
EP15X50	Q640	NPN, Vertical Output
EP15X50	Q645	NPN, Vertical Output
EP15X45	Q702	NPN, Horiz. Output
EP15X11	Q900	NPN, 22V Regulator
EP15X1	Q902	NPN, 22V Current Limiter
EP15X19	Q920	NPN, Horiz. Buffer

INTEGRATED CIRCUITS

EP84X10	IC110	IF/AGC
EP84X5	IC120	AFC
EP84X2	IC190	Audio
EP84X12	IC210	Chroma Processor
EP84X9	IC270	Chroma Demodulator

CAT. NO. DESCRIPTION

MODULES

EP93X113	Chroma/Video
EP93X71	Connector Board
EP93X104	Convergence
EP93X66	CRT Socket
EP93X92	Horizontal Osc. Board
EP93X72	IF/Audio
EP93X91	Power Supply/Buffer
EP93X103	Vertical

MISCELLANEOUS

EP8X37	ANODE CONNECTOR—CRT
EP8X29	CONNECTOR—No. 24, 3-Pin
EP10X19	FUSE—4 Amp., 250V, Fast Blow, Snap-In, F900
EP10X27	Fuse—1 1/2 Amp., 250V, Fast Blow, Snap-In, F910
EP34X23	SOCKET—Q702

PARTS ORDERING INFORMATION

To order parts, see your local General Electric Television Parts Distributor or contact General Electric Co., Replacement Parts Center at nearest location listed below. Be sure to mention part description, receiver service number (on back of receiver) and part catalog number if available.

401 Tukwila Parkway
Seattle, Washington 98188
Phone: (206) 575-2700

P. O. Box 50015
San Jose, California 95150
Phone: (408) 264-3602

P. O. Box 5001
Carrollton, Texas 75006
Phone: (214) 245-7591

P. O. Box 50117
Atlanta, Georgia 30302
Phone: (404) 351-0220

3333 Pennsy Drive
Landover, Maryland 20785
Phone: (301) 772-6444

Windsor Industrial Park
15 Thompson Rd.
East Windsor, Ct. 06088
Phone: (203) 623-8281

P. O. Box 2308
Zanesville, Ohio 43701
Phone: (614) 826-7614

6735 South Harlem
Chicago, Illinois 60638
Phone: (312) 496-6298

1235 Saline Street
N. Kansas City, Mo. 64116
Phone: (913) 371-6600

5390 E. 39th Avenue
Denver, Colorado 80207
Phone: (303) 320-3321

SERVICE MANUALS

Order service manuals from: General Electric Co.
P. O. Box 500
New Concord, Ohio 43762

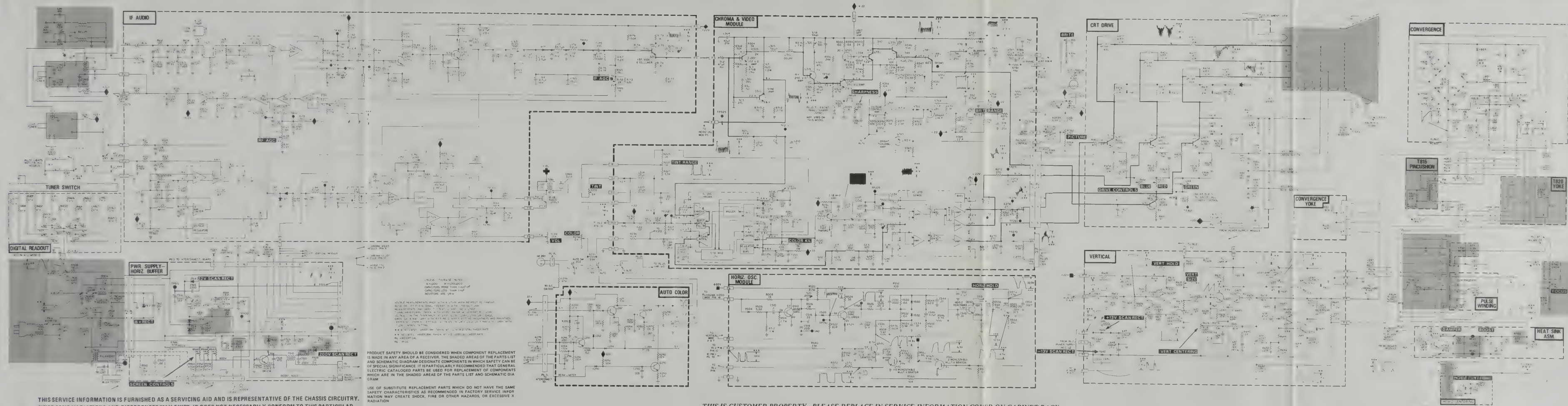
Be sure to give the service number of your receiver.

For information on other General Electric technical publications, service aids, and parts programs, contact

General Electric Co.
Product Service
Dept. MM
College Blvd.
Portsmouth, Va. 23705

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THIS SERVICE INFORMATION IS FURNISHED AS A SERVICING AID AND IS REPRESENTATIVE OF THE CHASSIS CIRCUITRY. SINCE SOME VARIATIONS AND DIFFERENCES MAY EXIST, IT DOES NOT NECESSARILY CONFORM TO THIS PARTICULAR RECEIVER.

FOR COMPLETE SERVICE INFORMATION INCLUDING TROUBLESHOOTING CHARTS, REFER TO THE SERVICE MANUAL FOR THIS CHASSIS

THIS IS CUSTOMER PROPERTY. PLEASE REPLACE IN SERVICE INFORMATION COVER ON CABINET BACK.

YC-2 CHASSIS
TECHNICAL INFORMATION

EDURE

CAT. NO. SYMBOL DESCRIPTION

RESISTORS — SPECIAL

EP14X165	R313	75 ohm, 5%, 1/4W
EP14X85	R642	.39 ohm, 5%, 2W
EP14X87	R703	47K, 5%, 2W
EP14X88	R710	50 ohm, 10%, 5W
EP62X87	R740	Focus Resistor, 240M
EP14X115	R855	430. 2W
EP14X113	R902	Degaussing
EP14X9	R904	2 ohm, 5%, 15W
EP14X159	R906	1.6K, 10%, 15W
EP14X89	R908	750 ohm, 5%, 3W
EU14X6	R920	160 ohm, 5%, 2W
EP14X103	R922	10K, 5%, 1/2W
EP14X43	R926	1K, 7W, 10%

POTENTIOMETERS

EP49X249	R741	Focus, 11 meg.
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CAPACITORS

EP18X91	C701	330pf, 20%, 2KV
EP25X69	C702	.0056uf, 1.2KV, 5%
EP20X21	C704	.1uf, 10%, 2.4KV
EP25X28	C902	.047uf, 20%, 600V, Mylar

	C904A *	400uf, 175V
EP31X57	C904B *	300uf, 175V
	C904C *	10uf, 160V
EP31X61	C918 *	22uf, 35V
EP31X25	C922 *	10uf, 350V

COILS & TRANSFORMERS

EP36X57	L900	Choke—Filter, 3.2 - 4.1MHz
EP36X154	L902	Coil—Degaussing
EP63X13	L904	Filter Reactor
EP64X31	T195	Transformer—Audio Output
EP77X33	T710	Transformer—HV, w/Y730
EP36X163	T710A	Transformer—Pulse Winding
EP36X166	T815	Pincushion Assembly
EP76X21	T820	Yoke—Deflection
EP64X32	T900	Transformer—Filament

DIODES

EP41X10	X200	Crystal, 3.58MHz
EP16X3	Y170	Germanium, Video Detector
EP16X3	Y183	Germanium, 4.5MHz Detector
EP16X3	Y184	Germanium, 4.5MHz Detector
ES16X27	Y200	Silicon, Chroma Burst Gate
ES16X27	Y210	Silicon, Pulse Limiting
ES16X27	Y215	Silicon, Tint Control Bias
ES16X27	Y282	Silicon, Isolation
ES16X27	Y284	Silicon, Isolation
ES16X27	Y290	Silicon, Coupling
ES16X27	Y295	Silicon, Reference
ES16X27	Y345	Silicon, DC Restoration
ES16X27	Y360	Silicon, Picture Control Coupling
ES16X27	Y372	Silicon, Picture Control Coupling
ES16X27	Y380	Silicon, Q380 Bias
ES16X27	Y345	Silicon, DC Restoration
ES16X27	Y380	Silicon, Q380 Bias
ES16X27	Y383	Silicon, Pulse Limiting
EU16X11	Y401	Silicon, Arc Protection
EU16X11	Y402	Silicon, Arc Protection
EU16X11	Y403	Silicon, Arc Protection
EU16X11	Y404	Silicon, Arc Protection
EU16X11	Y405	Silicon, Arc Protection
EU16X11	Y406	Silicon, Arc Protection
EU16X11	Y408	Silicon, Arc Protection
ES16X27	Y504	Silicon, Noise Gate
ES16X27	Y506	Silicon, Noise Gate
ES16X27	Y520	Silicon, Sync Gate
ES16X27	Y525	Silicon, Sync Bias
ES16X27	Y530	Silicon, Horiz. AFC
ES16X27	Y532	Silicon, Horiz. AFC
ES16X27	Y560	Silicon, Horiz. Coupling
EP16X22	Y620	Silicon, Clamping
EP16X22	Y630	Silicon, Bias Coupling
EP57X5	Y642	Silicon, Scan Rectifier
EU16X11	Y645	Silicon, Vertical Damper
EP57X5	Y646	Silicon, Scan Rectifier

*DENOTES ELECTROLYTIC CAPACITORS

CAT. NO. SYMBOL DESCRIPTION

DIODES (Continued)

EP16X11	Y701	Silicon, Damper
EP16X24	Y704	Silicon, Boost
EP57X5	Y710	Silicon, Horiz. Centering
EP57X5	Y712	Silicon, Horiz. Centering
Pt. of T710	Y730	Silicon, Rectifier, HV
EP57X4	Y801	Silicon, Convergence
EP57X4	Y802	Silicon, Convergence
EP57X4	Y803	Silicon, Convergence
EP57X4	Y804	Silicon, Convergence
EP57X4	Y805	Silicon, Convergence
EP57X4	Y806	Silicon, Convergence
EP57X4	Y912	Silicon, B+ Rectifier
EP57X5	Y914	Silicon, Scan Rectifier
ES16X27	Y915	Silicon, Bias
EP16X2	Y916	Zener, 22V
EP57X5	Y920	Silicon, Scan Rectifier
ES16X27	Y922	Silicon, T910 Damping

TRANSISTORS

EP15X9	Q132	NPN, RF AGC Amplifier
EP15X54	Q149	NPN, 3rd IF
EP15X54	Q154	NPN, 4th IF
EP15X6	Q179	NPN, 1st Video E. Follower
EP15X16	Q195	NPN, Audio Output
ES15X90	Q200	PNP, 3.58MHz Amplifier
EP15X1	Q230	NPN, Sideband Amplifier
ES15X90	Q240	PNP, ACC Amplifier
EP15X5	Q280	NPN, Chroma Averaging Amp.
EP15X9	Q282	NPN, R-Y Stabilizing
EP15X9	Q284	NPN, B-Y Stabilizing
EP15X9	Q290	NPN, Brightness Tracking
EP15X1	Q295	NPN, DC Restorer
EP15X5	Q300	NPN, 1st Video Amplifier
EP15X9	Q305	NPN, Chroma E. Follower
EP15X9	Q310	NPN, Sync, E. Follower
EP15X48	Q315	PNP, 2nd Video Amplifier
EP15X3	Q320	NPN, 1/2 Video Dif. Amp.
EP15X5	Q325	NPN, 3rd Video Amplifier
EP15X3	Q330	NPN, 1/2 Video Dif. Amp.
EP15X5	Q335	NPN, 2nd Video E. Follower
EP15X6	Q345	NPN, 3rd Video E. Follower
EP15X5	Q355	NPN, Picture Control Amp
EP15X48	Q360	PNP, Brightness Limiting
EP15X6	Q365	NPN, Brightness Limiting
ES15X90	Q380	PNP, Blanking Amplifier
EP15X48	Q385	PNP, Brightness Track. Amp.
EP15X18	Q401	NPN, Blue Output
EP15X18	Q402	NPN, Red Output
EP15X18	Q403	NPN, Green Output
EP15X60	Q404	PNP, Video Driver
EP15X1	Q510	NPN, Noise Gate
EP15X9	Q520	NPN, Sync Clipper
EP15X8	Q540	NPN, AFC Sawtooth Gen
EP15X1	Q550	NPN, Horiz. Reactance
EP15X1	Q555	NPN, Horiz. Oscillator
EP15X9	Q560	NPN, 1/2 Horiz. Pulse Gen.
EP15X6	Q570	NPN, 1/2 Horiz. Pulse Gen.
EP15X2	Q605	NPN, 1/2 Vert. Oscillator
ES15X90	Q610	PNP, 1/2 Vert. Oscillator
EP15X1	Q615	NPN, Vert. Sawtooth Gen.
EP15X6	Q620	NPN, 1/2 Vert. Dif. Amp.
EP15X1	Q625	NPN, 1/2 Vert. Dif. Amp.
EP15X53	Q630	PNP, Vertical Amplifier
EP15X53	Q635	PNP, Vertical Phase Inverter
EP15X50	Q640	NPN, Vertical Output
EP15X50	Q645	NPN, Vertical Output
EP15X45	Q702	NPN, Horiz. Output
EP15X11	Q900	NPN, 22V Regulator
EP15X1	Q902	NPN, 22V Current Limiter
EP15X19	Q920	NPN, Horiz. Buffer

INTEGRATED CIRCUITS

EP84X10	IC110	IF/AGC
EP84X5	IC120	AFC
EP84X2	IC190	Audio
EP84X12	IC210	Chroma Processor
EP84X9	IC270	Chroma Demodulator

CAT. NO. DESCRIPTION

MODULES

EP93X113	Chroma/Video
EP93X71	Connector Board
EP93X104	Convergence
EP93X66	CRT Socket
EP93X92	Horizontal Osc. Board
EP93X72	IF/Audio
EP93X91	Power Supply/Buffer
EP93X103	Vertical

MISCELLANEOUS

EP8X37	ANODE CONNECTOR—CRT
EP8X29	CONNECTOR—No. 24, 3-Pin
EP10X19	FUSE—4 Amp., 250V, Fast Blow, Snap-In, F900
EP10X27	Fuse—1/4 Amp., 250V, Fast Blow, Snap-In, F910
EP34X23	SOCKET—Q702

PARTS ORDERING INFORMATION

To order parts, see your local General Electric Television Parts Distributor or contact General Electric Co., Replacement Parts Center at nearest location listed below. Be sure to mention part description, receiver service number (on back of receiver) and part catalog number if available.

401 Tukwila Parkway
Seattle, Washington 98188
Phone: (206) 575-2700

P. O. Box 50015
San Jose, California 95150
Phone: (408) 264-3602

P. O. Box 5001
Carrollton, Texas 75006
Phone: (214) 245-7591

P. O. Box 50117
Atlanta, Georgia 30302
Phone: (404) 351-0220

3333 Pennsy Drive
Landover, Maryland 20785
Phone: (301) 772-6444

Windsor Industrial Park
15 Thompson Rd.
East Windsor, Ct. 06088
Phone: (203) 623-8281

P. O. Box 2308
Zanesville, Ohio 43701
Phone: (614) 826-7614

6735 South Harlem
Chicago, Illinois 60638
Phone: (312) 496-6298

1235 Saline Street
N. Kansas City, Mo. 64116
Phone: (913) 371-6600

5390 E. 39th Avenue
Denver, Colorado 80207
Phone: (303) 320-3321

SERVICE MANUALS

Order service manuals from: General Electric Co.
P. O. Box 500
New Concord, Ohio 43701

Be sure to give the service number of your receiver.

For information on other General Electric technical publications, service aids, and parts programs, contact

General Electric Co.
Product Service
Dept. MM
College Blvd.
Portsmouth, Va. 23705

73E260825-1

DESCRIPTION

CAT. NO. SYMBOL DESCRIPTION

TRANSISTORS (Continued)

Silicon, Clamping	EP15X9	Q520	NPN, Sync Clipper
Silicon, Bias Coupling	EP15X8	Q540	NPN, AFC Sawtooth Generator
Silicon, Vertical Damper	EP15X1	Q550	NPN, Horiz. Reactance
Silicon, Clamping	EP15X1	Q555	NPN, Horiz. Oscillator
Silicon, Damper	EP15X9	Q560	NPN, ½ Horiz. Pulse Gen.
Silicon, Boost	EP15X6	Q570	NPN, ½ Horiz. Pulse Gen.
Silicon, Horiz. Centering	EP15X2	Q605	NPN, ½ Vert. Oscillator
Silicon, Horiz. Centering	ES15X90	Q610	PNP, ½ Vert. Oscillator
Silicon, Convergence	EP15X1	Q615	NPN, Vert. Sawtooth Gen.
Silicon, Convergence	EP15X6	Q620	NPN, ½ Vert. Dif. Amp.
Silicon, Convergence	EP15X1	Q625	NPN, ½ Vert. Dif. Amp.
Silicon, Convergence	EP15X53	Q630	PNP, Vertical Amplifier
Silicon, Convergence	EP15X53	Q635	PNP, Vertical Phase Inverter
Silicon, Convergence	EP15X50	Q640	NPN, Vertical Output
Silicon, Convergence	EP15X50	Q645	NPN, Vertical Output
Silicon, Pincushion	EP15X34	Q701	NPN, Horiz. Driver
Silicon, Pincushion	EP15X45	Q702	NPN, Horiz. Output
Silicon, Bias	EP15X3	Q801	NPN, Bottom Pincushion
Silicon, Bias	EP15X3	Q802	NPN, Top Pincushion
Silicon, +143V Rectifier	EP15X3	Q803	NPN, Pincushion Amp.
Silicon, +143V Rectifier	EP15X9	Q1701	NPN, Width Correction
Silicon, +143V Rectifier	EP15X6	Q1702	NPN, Peak Beam Limiter
Silicon, +143V Rectifier	EP15X25	Q2010	NPN, Audio Output
Silicon, +30V Rectifier	EP15X24	Q2020	PNP, Audio Output
Silicon, +30V Rectifier	EP15X6	Q2030	NPN, Audio Driver

INTEGRATED CIRCUITS

Silicon, +143V Rectifier	EP84X10	IC110	IF/AGC
Silicon, +143V Rectifier	EP84X5	IC120	AFC
Silicon, +143V Rectifier	EP84X2	IC190	Audio
Silicon, +143V Rectifier	EP84X12	IC210	Chroma Processor
Silicon, +200V Rectifier	EP84X9	IC270	Chroma Demodulator

Silicon, Beam Limiting	CAT. NO.	DESCRIPTION
Silicon, Beam Current Limiting		
Silicon, Beam Current Detector		

MODULES

RS	EP93X72	IF/Audio
NPN, RF AGC Amplifier	EP93X113	Chroma/Video
NPN, 3rd IF	EP93X102	RGB Drive
NPN, 4th IF	EP93X92	Horiz. Oscillator
NPN, 1st Video E. Follower	EP93X103	Vertical
NPN, Audio Output	EP93X100	Convergence/Pincushion
PNP, 3.58MHz Amplifier	EP93X95	Diode Rectifier
NPN, Sideband Amplifier	EP93X97	Signal Interconnect Bd.
PNP, ACC Amplifier	EP93X94	CRT Socket Bd.
NPN, Chroma Averaging Amp.	EP93X98	Sweep Interconnect Bd.
NPN, R-Y Stabilizing	EP93X99	Audio Output

MISCELLANEOUS

NPN, B-Y Stabilizing	EP8X37	ANODE CONNECTOR—CRT
NPN, Brightness Tracking	EP10X23	FUSE—F901, 1A, 250V, Fast Blow
NPN, DC Restorer	EP10X13	FUSE—F1201, 2.5A, 125V, Slow Blow
NPN, 1st Video Amplifier	ES10X18	CIRCUIT BREAKER—CB1200
NPN, Chroma E. Follower		
NPN, Sync, E. Follower		
PNP, 2nd Video Amplifier		
NPN, ½ Video Dif. Amp.		
NPN, 3rd Video Amplifier		
NPN, ½ Video Dif. Amp.		
NPN, 2nd Video E. Follower		
NPN, 3rd Video E. Follower		
NPN, Picture Control Amplifier		
PNP, Brightness Limiting		
NPN, Brightness Limiting		
PNP, Blanking Amplifier		
PNP, Brightness Track. Amp.		
NPN, Blue Output		
NPN, Red Output		
NPN, Green Output		
PNP, Video Driver		
NPN, Noise Gate		

PARTS ORDERING INFORMATION

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401 Tukwila Parkway
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Phone: (206) 575-2700

P. O. Box 50015
San Jose, California 95150
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P. O. Box 5001
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Phone: (214) 245-7591

P. O. Box 50117
Atlanta, Georgia 30302
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3333 Pennsy Drive
Landover, Maryland 20785
Phone: (301) 772-6444

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15 Thompson Rd.
East Windsor, Ct. 06088
Phone: (203) 623-8281

P. O. Box 2308
Zanesville, Ohio 43701
Phone: (614) 826-7614

6735 South Harlem
Chicago, Illinois 60638
Phone: (312) 496-6298

1235 Saline Street
N. Kansas City, Mo. 64116
Phone: (913) 371-6600

5390 E. 39th Avenue
Denver, Colorado 80207
Phone: (303) 320-3321

SERVICE MANUALS

Order service manuals from: **General Electric Co.**
P. O. Box 500
New Concord, Ohio 43762

Be sure to give the service number of your receiver.

For information on other General Electric technical publications, service aids, and parts programs, contact
General Electric Co.
Product Service
Dept. MM
College Blvd.
Portsmouth, Va. 23705

YM CHASSIS

TECHNICAL INFORMATION

FOR USE OF QUALIFIED TECHNICIANS ONLY

ADJUSTMENT PROCEDURE

HIGH VOLTAGE
Normal high voltage is approximately 30.5KV at zero beam (black picture) with 120VAC line input. Not adjustable.

AGC ADJUSTMENT

1. Tune in a strong station. Set Picture control to mid position and Brightness control for normal viewing.
2. Set IF AGC to mid position. This is normally the optimum setting for this control.
3. Turn RF AGC control fully CW. Then turn CDW slowly out of over-lead into slight noise. Continue CDW until noise just disappears.

AFC ADJUSTMENT

1. Tune in a strong color signal. Turn any Automatic or AFC switches to OFF. Fine tune for best picture detail.
2. Turn the Automatic or AFC switches ON and note any changes in picture detail. If necessary, adjust L121 so that picture detail is the same as when AFC was OFF. Check all channels.

GRAY SCALE AND BRIGHTNESS RANGE

1. Tune in a color picture. Set the Brightness, Picture, Color, Sharpness, Brightness Range and CRT Screen controls fully CCW.
2. Short TP405 (on RGB Module) to chassis ground. One at a time, turn each Screen control CW until the screen lights. Then turn it CCW until the screen just goes black.
3. Remove the short from TP405. Turn the Brightness Range control fully CW. Turn the Brightness control CW until the screen just lights. If necessary, adjust the Screen controls for gray scale in the low brightness area of the picture.
4. Turn the Brightness and Picture controls up for a normal brightness picture. Adjust the Drive control of the predominant color for best gray scale in the high brightness area.
5. Turn the Brightness control fully CW and the Picture control fully CCW. Turn the Brightness Range control fully CCW, then turn it CW until the picture is slightly washed out.

CHROMA ADJUSTMENTS: COLOR KILLER, TINT RANGE

1. Tune in a color bar signal. Turn the Color control to maximum. Set the Tint control to mechanical center. Turn any automatic switches to OFF.
2. Turn the Color Killer control fully CCW and short TP202 to chassis ground. Turn the Color Killer CW slowly until color information is present in the picture.
3. Adjust crystal frequency (C220) to cause the bars to stop or float slowly.
4. Remove the short from TP202.
5. Tune to an unused UHF channel. Turn the Color Killer control fully CW. Then turn the control slowly CCW until you have colored snow. Then turn it CW until colored snow just disappears.
6. Return to a color bar or broadcast color signal. Adjust the Tint Phase Coil (L220) for proper flesh tone or color bar sequence. Check the range of the Tint control on a broadcast signal. If necessary, adjust the Tint Range (R225) control so that the Tint control will cause flesh tones to be green at one end and magenta at the other end of its range.

THE RECEIVER IS EQUIPPED WITH A POLARIZED POWER CORD TO INSURE THAT THE CHASSIS IS ALWAYS CONNECTED TO THE GROUNDED SIDE OF THE AC LINE THROUGH A 2.2 MEG RESISTOR, R1200. DEFEATING THIS SAFETY DEVICE MAY CREATE A POTENTIAL HAZARD TO THE SERVER AND THE USER.

SHATTER-PROOF SAFETY GLASSES SHOULD ALWAYS BE WORN WHEN WORKING AROUND AN EXPOSED PICTURE TUBE. BEFORE HANDLING THE TUBE, THOROUGHLY DISCHARGE THE SECOND ANODE TO THE OUTER AQUADAG COATING OF THE PICTURE TUBE. REPLACEMENT PICTURE TUBES MUST HAVE INTEGRAL X-RAY AND IMPLSION PROTECTION. REPLACE ONLY WITH TUBE OF SAME TYPE NUMBER.

BEFORE INSTALLING THE CABINET BACK:

INSPECT LEAD DRESS:

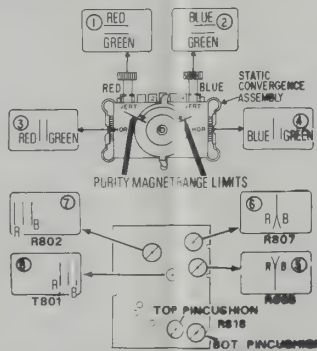
1. No lead should be against a power resistor (2 watts or more).
2. High voltage connections must have no sharp points.
3. The insulation on antenna leads should not be damaged. The leads should not be dressed close to any high voltage point or AC line connection.
4. The AC wiring should be inspected for damaged insulation, frayed wires, pinched leads, or cold solder connections.
5. Inspect the AC line cord for broken or damaged insulation.

AFTER INSTALLING THE CABINET BACK:

- A. Do not plug the receiver into a power outlet. Connect both blades of the power plug together and place the ON-OFF switch in the ON position.
- B. Measure between the shorted power plug and the following points. Readings should be as indicated.

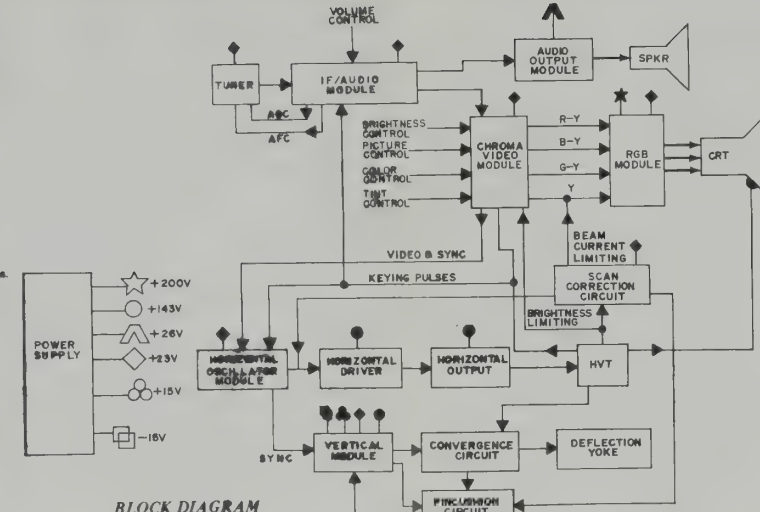
TEST POINT	MIN. OHMS	MAX. OHMS
ANTENNA TERMINALS - UHF	600K	500K
ANTENNA TERMINALS - VHF	600K	500K
CABINET BACK SCREWS	600K	OPEN CIRCUIT
ALL METAL CONTROL OR CHANNEL SELECTOR SHAFTS (WITH KNOBS REMOVED)		OPEN CIRCUIT
ALL NON-REMOVABLE METALLIC KNOBS, PUSH BUTTONS, EARPHONE JACKS, ETC.		OPEN CIRCUIT
METAL ESCUTCHEONS AND OVERLAYS		OPEN CIRCUIT

IF ANY READING IS OUTSIDE LIMITS SPECIFIED, THE CAUSE SHOULD BE IDENTIFIED AND CORRECTED BEFORE OPERATING THE RECEIVER.

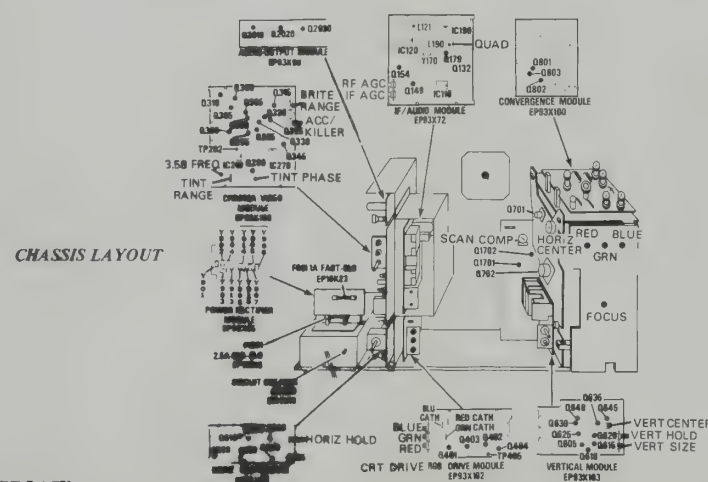


GREEN GUN IS IN THE CENTER AND NEEDS NO CONVERGENCE. CONVERGE RED AND BLUE ON GREEN.

CONVERGENCE ADJUSTMENTS



BLOCK DIAGRAM



CHASSIS LAYOUT

SYMPTOM	POSSIBLE CAUSE	CAT.NO.	TROUBLESHOOTING PROCEDURE
No Radio, Sound OK, Circuit Breaker Tripped	- Yoke - Q702 - Vertical Module - R1202 3 Ohm, 5 Watt - R1204 3 Ohm, 5 Watt	EP16X20 EP15X45 EP93X103 EP14X155 EP14X155	1. Set brightness control/picture control to minimum. 2. Unplug PG16 vertical yoke two pin plug and PG800 8 pin convergence plug, reset circuit breaker and apply power. Circuit breaker does not trip - problem in Yoke. 3. If circuit breaker trips, remove Vertical Module, reset circuit breaker and apply power. PG16 and PG800 must remain disconnected. Circuit breaker does not trip - problem in Vertical Module. Circuit breaker trips - problem in Horiz. Output or Damper circuits.
No Vertical Sweep or Partial Vertical Sweep	- Vertical Module - R1202 3 Ohm, 5 Watt - R1204 3 Ohm, 5 Watt	EP93X103 EP14X155 EP14X155	Replace Vertical Module. If replacing module did not correct problem, then check R1202 and R1204 with ohmmeter. Resistors are located in low voltage power assembly.
Missing Colors (Abnormal gray scale)	- RGB Module	EP93X102	Turn color gain control to minimum. If gray scale is abnormal, replace RGB module.
Missing Colors (Normal gray scale)	- Chroma/Video Module	EP93X108	Clean module contacts with spray cleaner (EP90X11) then reinsert module. If problem not corrected, replace module.
No Audio or Distorted Audio Video OK	- IC190 Audio - IF/Audio Module - Audio Output Module	EP94X2 EP93X72 EP93X99	Substitute IC190, if problem not corrected, clean module contacts with spray cleaner (EP90X11) then reinsert module. If problem not corrected, replace module.
No Sync	- Chroma/Video Module	EP93X108	
Horiz. Sync Problems	- Horiz. Osc. Module	EP93X69	
Excessive or Insufficient Brightness	- Adjust R374 - Brightness Range - RGB Module		Refer to Adjustment Procedure section of mini-manual.
No Color or Intermittent	- R241 Color Killer misadjusted - Chroma/Video Module	EP93X108	Refer to Adjustment Procedure section of mini-manual.
Snow in Picture	- Broken ground on IF Cable at tuner		Solder cable ground to VHF tuner.
VIR Color Problems	- Misadjusted - R82 Chroma Set Up - R45 Tint Set Up		Turn VIR switch off. Does set operate normally. If set operates OK, then turn VIR switch on and adjust appropriate set up control, R82 or R45. If problem is not resolved refer to VIR mini-manual.

CAT. NO.	SYMBOL	DESCRIPTION
EP14X153	R703	56K, 5%, 2W
EP14X26	R710	75 Ohm, 10%, 5W
EP14X115	R715	430 Ohm, 5%, 2W
EP14X148	R720	1.3K, 10%, 10W
EP62X86	R731	Focus Resistor, 240 Meg.
EP14X162	R801	20 Ohm, 5%, 5W
EP14X53	R1200	2.2 Meg, 10%, 3W
EP14X113	R1201	Thermistor-Deausing
EP14X155	R1202	3 Ohm, 5%, 5W
EP14X155	R1204	3 Ohm, 5%, 5W
EP14X55	R1206	40 Ohm, 10%, 3W
EP14X161	R1643	2.7 Meg, 10%, 3W

POTENTIOMETERS

EP49X249	R1641	Focus, 11 Meg, 10%
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CAPACITORS

EP18X91	C701	330pF, 20%, 2KV
EP18X137	C702	.015uF, 5%, 1.5KV
EP31X68	C705A	.400uF, 175V
EP31X62	C1201	.100uF, 250V
EP31X37	C1202	.100uF, 35V
EP31X37	C1204	.100uF, 35V
EP31X42	C1206A	1000uF, 40V
EP31X42	C1206B	1000uF, 40V
EP25X68	C1207	3.5uF, AC oil filled

COILS & TRANSFORMERS

EP64X37	L701	Choke-B+ Filter
EP64X168	L704	Coil-Horiz. Linearity
EP77X30	T710	Transformer-HVT
EP36X166	T715	Transformer-Pincushion
EP76X20	T820	Deflection Yoke
EP36X57	T1200	Line Choke
EP88X12	T1201	Transformer-Power

DIODES

EP41X10	X200	Crystal, 3.58MHz
EP16X3	Y170	Germanium, Video Detector
EP16X3	Y183	Germanium, 4.5MHz Detector
EP16X3	Y184	Germanium, 4.5MHz Detector
ES16X27	Y200	Silicon, Chroma Burst Gate
ES16X27	Y210	Silicon, Pulse Limiting
ES16X27	Y215	Silicon, Tint Control Bias
ES16X27	Y282	Silicon, Isolation
ES16X27	Y284	Silicon, Isolation
ES16X27	Y290	Silicon, Coupling
ES16X27	Y295	Silicon, Reference
ES16X27	Y345	Silicon, DC Restoration
ES16X27	Y360	Silicon, Picture Control Coupling
ES16X27	Y372	Silicon, Picture Control Coupling
ES16X27	Y380	Silicon, Q380 Bias
ES16X27	Y383	Silicon, Pulse Limiting
EU16X11	Y401	Silicon, Arc Protection
EU16X11	Y402	Silicon, Arc Protection
EU16X11	Y403	Silicon, Arc Protection
EU16X11	Y404	Silicon, Arc Protection
EU16X11	Y405	Silicon, Arc Protection
EU16X11	Y406	Silicon, Arc Protection
ES16X27	Y408	Silicon, Arc Protection
ES16X27	Y504	Silicon, Noise Gate
ES16X27	Y506	Silicon, Noise Gate
ES16X27	Y521	Silicon, Sync Gate
ES16X27	Y525	Silicon, Sync Bias
ES16X27	Y530	Silicon, Horiz. AFC
ES16X27	Y532	Silicon, Horiz. AFC
ES16X27	Y560	Silicon, Horiz. Coupling

*DENOTES ELECTROLYTIC CAPACITORS

CAT. NO.	SYMBOL	DESCRIPTION
EP16X22	Y620	Silicon, Clamping
EP16X22	Y640	Silicon, Base Coupling
EU16X11	Y645	Silicon, Vertical Damper
EU16X11	Y655	Silicon, Clamping
EP16X11	Y701	Silicon, Damper
EP16X24	Y704	Silicon, Boost
EP57X5	Y710	Silicon, Horiz. Centering
EP57X5	Y712	Silicon, Horiz. Centering
EP57X4	Y802	Silicon, Convergence
EP57X4	Y803	Silicon, Convergence
EP57X4	Y804	Silicon, Convergence
EP57X4	Y805	Silicon, Convergence
EP57X4	Y806	Silicon, Convergence
EP57X4	Y807	Silicon, Convergence
ES16X27	Y810	Silicon, Pincushion
ES16X27	Y813	Silicon, Pincushion
ES16X27	Y817	Silicon, Bias

POTENTIOMETERS

EP49X249	R1641	Focus, 11 Meg, 10%
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CAPACITORS

EP18X91	C701	330pF, 20%, 2KV
EP18X137	C702	.015uF, 5%, 1.5KV
EP31X68	C705A	.400uF, 175V
EP31X62	C1201	.100uF, 250V
EP31X37	C1202	.100uF, 35V
EP31X37	C1204	.100uF, 35V
EP31X42	C1206A	1000uF, 40V
EP31X42	C1206B	1000uF, 40V
EP25X68	C1207	3.5uF, AC oil filled

COILS & TRANSFORMERS

EP64X37	L701	Choke-B+ Filter
EP64X168	L704	Coil-Horiz. Linearity
EP77X30	T710	Transformer-HVT
EP36X166	T715	Transformer-Pincushion
EP76X20	T820	Deflection Yoke
EP36X57	T1200	Line Choke
EP88X12	T1201	Transformer-Power

DIODES

EP41X10	X200	Crystal, 3.58MHz
EP16X3	Y170	Germanium, Video Detector
EP16X3	Y183	Germanium, 4.5MHz Detector
EP16X3	Y184	Germanium, 4.5MHz Detector
ES16X27	Y200	Silicon, Chroma Burst Gate
ES16X27	Y210	Silicon, Pulse Limiting
ES16X27	Y215	Silicon, Tint Control Bias
ES16X27	Y282	Silicon, Isolation
ES16X27	Y284	Silicon, Isolation
ES16X27	Y290	Silicon, Coupling
ES16X27	Y295	Silicon, Reference
ES16X27	Y345	Silicon, DC Restoration
ES16X27	Y360	Silicon, Picture Control Coupling
ES16X27	Y372	Silicon, Picture Control Coupling
ES16X27	Y380	Silicon, Q380 Bias
ES16X27	Y383	Silicon, Pulse Limiting
EU16X11	Y401	Silicon, Arc Protection
EU16X11	Y402	Silicon, Arc Protection
EU16X11	Y403	Silicon, Arc Protection
EU16X11	Y404	Silicon, Arc Protection
EU16X11	Y405	Silicon, Arc Protection
EU16X11	Y406	Silicon, Arc Protection
ES16X27	Y408	Silicon, Arc Protection
ES16X27	Y504	Silicon, Noise Gate
ES16X27	Y506	Silicon, Noise Gate
ES16X27	Y521	Silicon, Sync Gate
ES16X27	Y525	Silicon, Sync Bias
ES16X27	Y530	Silicon, Horiz. AFC
ES16X27	Y532	Silicon, Horiz. AFC
ES16X27	Y560	Silicon, Horiz. Coupling

*DENOTES ELECTROLYTIC CAPACITORS

CAT. NO.	SYMBOL	DESCRIPTION
EP15X9	Q520	NPN, Sync Clipper
EP15X26	Q540	NPN, AFC Sawtooth Generator
EP15X1	Q550	NPN, Horiz. Reactance
EP15X1	Q555	NPN, Horiz. Oscillator
EP15X9	Q560	NPN, % Horiz. Pulse Gen.
EP15X6	Q570	NPN, % Horiz. Pulse Gen.
EP15X2	Q605	NPN, % Vert. Oscillator
ES15X90	Q610	NPN, % Vert. Oscillator
EP15X1	Q615	NPN, Vert. Sawtooth Gen.
EP15X6	Q620	NPN, % Vert. Df. Amp.
EP15X1	Q625	NPN, % Vert. Df. Amp.
EP15X3	Q630	PNP, Vertical Amplifier
EP15X3	Q635	PNP, Vertical Phase Inverter
EP15X50	Q640	NPN, Vertical Output
EP15X50	Q645	NPN, Vertical Output
EP15X34	Q701	NPN, Horiz. Driver
EP15X45	Q702	NPN, Horiz. Output
EP15X3	Q801	NPN, Bottom Pincushion
EP15X3	Q802	NPN, Top Pincushion
EP15X3	Q803	NPN, Pincushion Amp
EP15X9	Q1701	NPN, Width Correction
EP15X6	Q1702	NPN, Peak Beam Limiter
EP15X25	Q2010	NPN, Audio Output
EP15X24	Q2020	NPN, Audio Output
EP15X6	Q2030	NPN, Audio Driver

POTENTIOMETERS

EP49X249	R1641	Focus, 11 Meg, 10%
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CAPACITORS

EP18X91	C701	330pF, 20%, 2KV
EP18X137	C702	.015uF, 5%, 1.5KV
EP31X68	C705A	.400uF, 175V
EP31X62	C1201	.100uF, 250V
EP31X37	C1202	.100uF, 35V
EP31X37	C1204	.100uF, 35V
EP31X42	C1206A	1000uF, 40V
EP31X42	C1206B	1000uF, 40V
EP25X68	C1207	3.5uF, AC oil filled

COILS & TRANSFORMERS

EP64X37	L701	Choke-B+ Filter
EP64X168	L704	Coil-Horiz. Linearity
EP77X30	T710	Transformer-HVT
EP36X166	T715	Transformer-Pincushion
EP76X20	T820	Deflection Yoke
EP36X57	T1200	Line Choke
EP88X12	T1201	Transformer-Power

DIODES

EP41X10	X200	Crystal, 3.58MHz
EP16X3	Y170	Germanium, Video Detector
EP16X3	Y183	Germanium, 4.5MHz Detector
EP16X3	Y184	Germanium, 4.5MHz Detector
ES16X27	Y200	Silicon, Chroma Burst Gate
ES16X27	Y210	Silicon, Pulse Limiting
ES16X27	Y215	Silicon, Tint Control Bias
ES16X27	Y282	Silicon, Isolation
ES16X27	Y284	Silicon, Isolation
ES16X27	Y290	Silicon, Coupling
ES16X27	Y295	Silicon, Reference
ES16X27	Y345	Silicon, DC Restoration
ES16X27	Y360	Silicon, Picture Control Coupling
ES16X27	Y372	Silicon, Picture Control Coupling
ES16X27	Y380	Silicon, Q380 Bias
ES16X27	Y383	Silicon, Pulse Limiting
EU16X11	Y401	Silicon, Arc Protection
EU16X11	Y402	Silicon, Arc Protection
EU16X11	Y403	Silicon, Arc Protection
EU16X11	Y404	Silicon, Arc Protection
EU16X11	Y405	Silicon, Arc Protection
EU16X11	Y406	Silicon, Arc Protection
ES16X27	Y408	Silicon, Arc Protection
ES16X27	Y504	Silicon, Noise Gate
ES16X27	Y506	Silicon, Noise Gate
ES16X27	Y521	Silicon, Sync Gate
ES16X27	Y525	Silicon, Sync Bias
ES16X27	Y530	Silicon, Horiz. AFC
ES16X27	Y532	Silicon, Horiz. AFC
ES16X27	Y560	Silicon, Horiz. Coupling

*DENOTES ELECTROLYTIC CAPACITORS

PARTS ORDERING INFORMATION

To order parts, see your local General Electric Television Parts Distributor or contact General Electric Co., Replacement Parts Center at nearest location listed below. Be sure to mention part description, receiver service number (on back of receiver) and part catalog number if available.

401 Tukwila Parkway
Seattle, Washington 98188
Phone: (206) 575-2700

P. O. Box 50015
San Jose, California 95150
Phone: (408) 264-3602

P. O. Box 5001
Carrollton, Texas 75006
Phone: (214) 245-7591

P. O. Box 50117
Atlanta, Georgia 30302
Phone: (404) 351-0220

3333 Pennsy Drive
Landover, Maryland 20785
Phone: (301) 772-6444

Windsor Industrial Park
15 Thompson Rd
East Windsor, CT 06088
Phone: (203) 623-8281

P. O. Box 2308
Zanesville, Ohio 43701
Phone: (614) 826-7614

6735 South Harlem
Chicago, Illinois 60638
Phone: (312) 496-6298

1235 Seline Street
N. Kansas City, Mo. 64116
Phone: (91



DESCRIPTION	CAT. NO.	SYMBOL	DESCRIPTION
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TRANSISTORS (Continued)

Silicon, Clamping	EP15X9	Q520	NPN, Sync Clipper
Silicon, Bias Coupling	EP15X8	Q540	NPN, AFC Sawtooth Generator
Silicon, Vertical Damper	EP15X1	Q550	NPN, Horiz. Reactance
Silicon, Clamping	EP15X1	Q555	NPN, Horiz. Oscillator
Silicon, Damper	EP15X9	Q560	NPN, 1/2 Horiz. Pulse Gen.
Silicon, Boost	EP15X6	Q570	NPN, 1/2 Horiz. Pulse Gen.
Silicon, Horiz. Centering	EP15X2	Q605	NPN, 1/2 Vert. Oscillator
Silicon, Horiz. Centering	ES15X90	Q610	PNP, 1/2 Vert. Oscillator
Silicon, Convergence	EP15X1	Q615	NPN, Vert. Sawtooth Gen.
Silicon, Convergence	EP15X6	Q620	NPN, 1/2 Vert. Dif. Amp.
Silicon, Convergence	EP15X1	Q625	NPN, 1/2 Vert. Dif. Amp.
Silicon, Convergence	EP15X53	Q630	PNP, Vertical Amplifier
Silicon, Convergence	EP15X53	Q635	PNP, Vertical Phase Inverter
Silicon, Convergence	EP15X50	Q640	NPN, Vertical Output
Silicon, Convergence	EP15X50	Q645	NPN, Vertical Output
Silicon, Pincushion	EP15X34	Q701	NPN, Horiz. Driver
Silicon, Pincushion	EP15X45	Q702	NPN, Horiz. Output
Silicon, Bias	EP15X3	Q801	NPN, Bottom Pincushion
Silicon, Bias	EP15X3	Q802	NPN, Top Pincushion
Silicon, +143V Rectifier	EP15X3	Q803	NPN, Pincushion Amp.
Silicon, +143V Rectifier	EP15X9	Q1701	NPN, Width Correction
Silicon, +143V Rectifier	EP15X6	Q1702	NPN, Peak Beam Limiter
Silicon, +143V Rectifier	EP15X25	Q2010	NPN, Audio Output
Silicon, +30V Rectifier	EP15X24	Q2020	PNP, Audio Output
Silicon, +30V Rectifier	EP15X6	Q2030	NPN, Audio Driver

INTEGRATED CIRCUITS

Silicon, +143V Rectifier	EP84X10	IC110	IF/AGC
Silicon, +200V Rectifier	EP84X5	IC120	AFC
Silicon, -15V Rectifier	EP84X2	IC190	Audio
Silicon, +15V Rectifier	EP84X12	IC210	Chroma Processor
Silicon, +200V Rectifier	EP84X9	IC270	Chroma Demodulator

Silicon, Beam Limiting
Silicon, Width Correction
Silicon, Beam Current Limiting
Silicon, Beam Current Detector

CAT. NO.	DESCRIPTION
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MODULES

RS	EP93X72	IF/Audio
NPN, RF AGC Amplifier	EP93X113	Chroma/Video
NPN, 3rd IF	EP93X102	RGB Drive
NPN, 4th IF	EP93X92	Horiz. Oscillator
NPN, 1st Video E. Follower	EP93X103	Vertical
NPN, Audio Output	EP93X100	Convergence/Pincushion
PNP, 3.58MHz Amplifier	EP93X95	Diode Rectifier
NPN, Sideband Amplifier	EP93X97	Signal Interconnect Bd.
PNP, ACC Amplifier	EP93X94	CRT Socket Bd.
NPN, Chroma Averaging Amp.	EP93X98	Sweep Interconnect Bd.
NPN, R-Y Stabilizing	EP93X99	Audio Output

MISCELLANEOUS

EP8X37	ANODE CONNECTOR—CRT
EP10X23	FUSE—F901, 1A, 250V, Fast Blow
EP10X13	FUSE—F1201, 2.5A, 125V, Slow Blow
ES10X18	CIRCUIT BREAKER—CB1200

NPN, Sync, E. Follower
PNP, 2nd Video Amplifier
NPN, 1/2 Video Dif. Amp.
NPN, 3rd Video Amplifier
NPN, 1/2 Video Dif. Amp.
NPN, 2nd Video E. Follower
NPN, 3rd Video E. Follower
NPN, Picture Control Amplifier
PNP, Brightness Limiting
NPN, Brightness Limiting
PNP, Blanking Amplifier
PNP, Brightness Track. Amp.
NPN, Blue Output
NPN, Red Output
NPN, Green Output
PNP, Video Driver
NPN, Noise Gate

PARTS ORDERING INFORMATION

To order parts, see your local **General Electric Television Parts Distributor** or contact **General Electric Co., Replacement Parts Center** at nearest location listed below. Be sure to mention part description, receiver service number (on back of receiver) and part catalog number if available.

401 Tukwila Parkway
Seattle, Washington 98188
Phone: (206) 575-2700

P. O. Box 50015
San Jose, California 95150
Phone: (408) 264-3602

P. O. Box 5001
Carrollton, Texas 75006
Phone: (214) 245-7591

P. O. Box 50117
Atlanta, Georgia 30302
Phone: (404) 351-0220

3333 Pennsy Drive
Landover, Maryland 20785
Phone: (301) 772-6444

Windsor Industrial Park
15 Thompson Rd.
East Windsor, Ct. 06088
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P. O. Box 2308
Zanesville, Ohio 43701
Phone: (614) 826-7614

6735 South Harlem
Chicago, Illinois 60638
Phone: (312) 496-6298

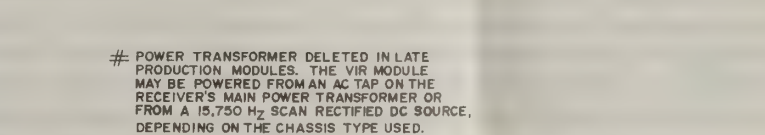
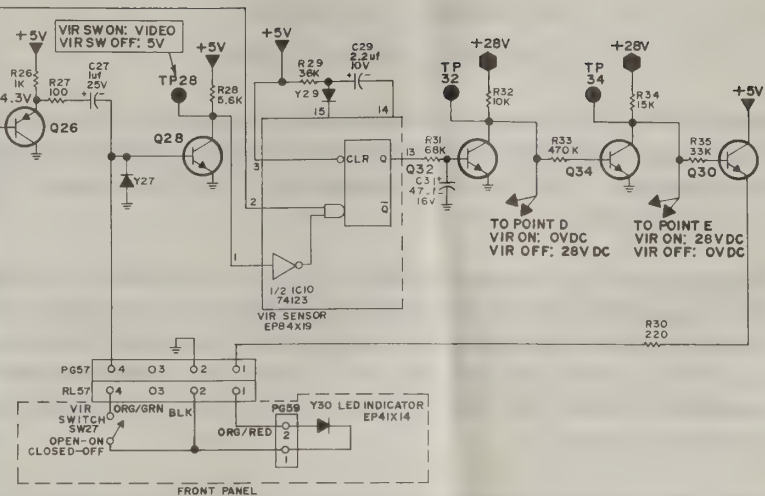
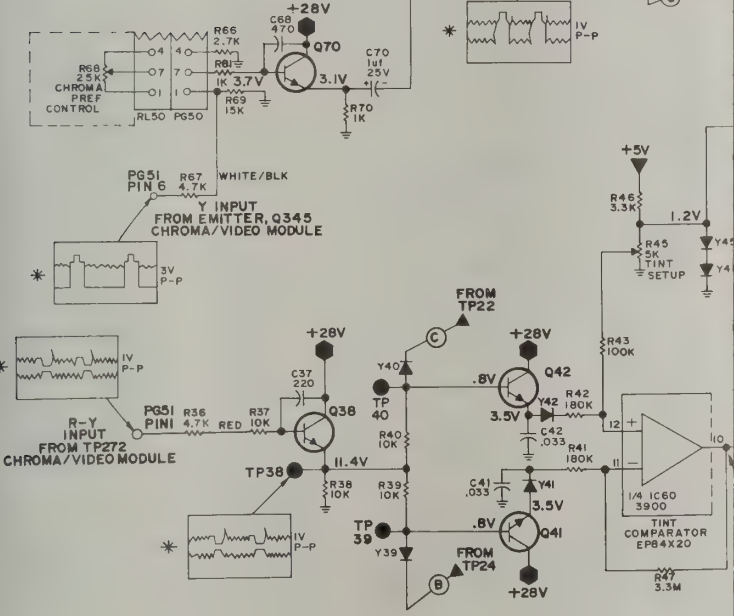
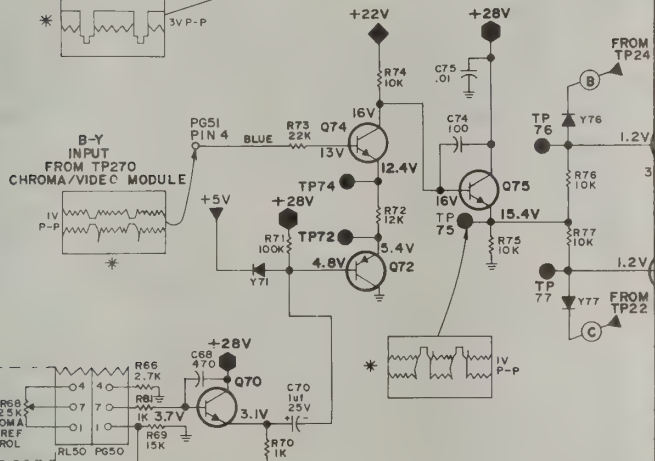
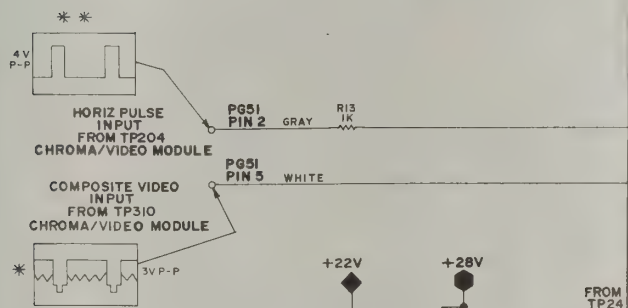
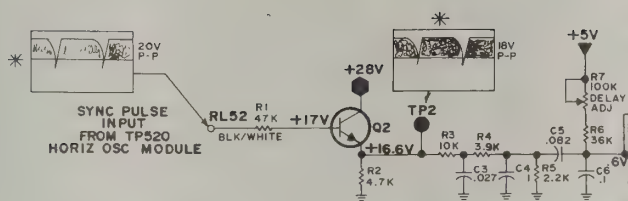
1235 Saline Street
N. Kansas City, Mo. 64116
Phone: (913) 371-6600

5390 E. 39th Avenue
Denver, Colorado 80207
Phone: (303) 320-3321

SERVICE MANUALS

Order service manuals from: **General Electric Co.**
P. O. Box 500
New Concord, Ohio 43762
Be sure to give the service number of your receiver.

For information on other General Electric technical publications, service aids, and parts programs, contact
General Electric Co.
Product Service
Dept. MM
College Blvd.
Portsmouth, Va. 23705



POWER TRANSFORMER DELETED IN LATE PRODUCTION MODULES. THE VIR MODULE MAY BE POWERED FROM AN AC TAP ON THE RECEIVER'S MAIN POWER TRANSFORMER OR FROM A 15.750 H₂ SCAN RECTIFIED DC SOURCE, DEPENDING ON THE CHASSIS TYPE USED.

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN COMPONENT REPLACEMENT IS MADE IN ANY AREA OF A RECEIVER. THE SHADED AREAS OF THE PARTS LIST AND SCHEMATIC DIAGRAM DESIGNATE COMPONENTS IN WHICH SAFETY CAN BE OF SPECIAL SIGNIFICANCE. IT IS PARTICULARLY RECOMMENDED THAT GENERAL ELECTRIC CATALOGED PARTS BE USED FOR REPLACEMENT OF COMPONENTS WHICH ARE IN THE SHADED AREAS OF THE PARTS LIST AND SCHEMATIC DIAGRAM.

USE OF SUBSTITUTE REPLACEMENT PARTS WHICH DO NOT HAVE THE SAME SAFETY CHARACTERISTICS AS RECOMMENDED IN FACTORY SERVICE INFORMATION MAY CREATE SHOCK, FIRE OR OTHER HAZARDS, OR EXCESSIVE X-RADIATION.

CE INFORMATION IS FURNISHED AS A AID AND IS REPRESENTATIVE OF THE RCUTRY. SINCE SOME VARIATIONS RENCES MAY EXIST, IT DOES NOT LY CONFORM TO THIS PARTICULAR FOR COMPLETE SERVICE INFORMATION THE SERVICE MANUAL FOR THIS CHASSIS.

YM CHASSIS

TECHNICAL INFORMATION

FOR USE OF QUALIFIED TECHNICIANS ONLY

ADJUSTMENT PROCEDURE

HIGH VOLTAGE

Normal high voltage is approximately 30.5KV at zero beam (black picture) with 120VAC line input. Not adjustable.

AGC ADJUSTMENT

1. Tune in a strong station. Set Picture control to mid position and Brightness control for normal viewing.
2. Set IF AGC to mid position. This is normally the optimum setting for this control.
3. Turn RF AGC control fully CW. Then turn CW slowly out of overload into slight snow. Continue CW until snow just disappears.

AFC ADJUSTMENT

1. Tune in a strong color signal. Turn any Automatic or AFC switches to OFF. Fine tune for best picture detail.
2. Turn the Automatic or AFC switches ON and note any changes in picture detail. If necessary, adjust L121 so that picture detail is the same as when AFC was OFF. Check all channels.

GRAY SCALE AND BRIGHTNESS RANGE

1. Tune in a color picture. Set the Brightness, Picture, Color, Sharpness, Brightness Range and CRT Screen controls fully CW.
2. Short TP405 (on RGB Module) to chassis ground. One at a time, turn each Screen control CW until the screen lights. Then turn it CW until the screen just goes black.
3. Remove the short from TP405. Turn the Brightness Range control full CW. Turn the Brightness control CW until the screen just lights. If necessary, adjust the Screen controls for gray scale in the low brightness areas of the picture.
4. Turn the Brightness and Picture controls up for a normal brightness picture. Adjust the Drive control of the predominant color for best gray scale in the high brightness areas.
5. Turn the Brightness control fully CW and the Picture control fully CW. Turn the Brightness Range control fully CW, then turn it CW until the picture is slightly washed out.

CHROMA ADJUSTMENTS: COLOR KILLER, TINT RANGE

1. Tune in a color bar signal. Turn the Color control to maximum. Set the Tint control to mechanical center. Turn any automatic switches to OFF.
2. Turn the Color Killer control fully CW and short TP202 to chassis ground. Turn the Color Killer CW slowly until color information is present in the picture.
3. Adjust crystal frequency (C220) to cause the bars to stop or float slowly.
4. Remove the short from TP202.
5. Tune to an unused UHF channel. Turn the Color Killer control fully CW. Then turn the control slowly CW until you have colored snow. Then turn it CW until colored snow just disappears.
6. Return to a color bar or broadcast color signal. Adjust the Tint Phase Control (L220) for proper flesh tone or color bar sequence. Check the range of the Tint control on a broadcast signal. If necessary, adjust the Tint Range (R228) control so that the Tint control will cause flesh tones to be green at one end and magenta at the other end of its range.

THE RECEIVER IS EQUIPPED WITH A POLARIZED POWER CORD TO INSURE THAT THE CHASSIS IS ALWAYS CONNECTED TO THE GROUND SIDE OF THE AC LINE THROUGH A 2.2 MEG RESISTOR, R1200. DEFEATING THIS SAFETY DEVICE MAY CREATE A POTENTIAL HAZARD TO THE SERVICER AND THE USER.

SHATTER-PROOF SAFETY GLASSES SHOULD ALWAYS BE WORN WHEN WORKING AROUND AN EXPOSED PICTURE TUBE. BEFORE HANDLING THE TUBE, THOROUGHLY DISCHARGE THE SECOND ANODE TO THE OUTER AQUADAG COATING OF THE PICTURE TUBE. REPLACEMENT PICTURE TUBES MUST HAVE INTEGRAL X-RAY AND IMPLSION PROTECTION. REPLACE ONLY WITH TUBE OF SAME TYPE NUMBER.

BEFORE INSTALLING THE CABINET BACK:

INSPECT LEAD DRESS:

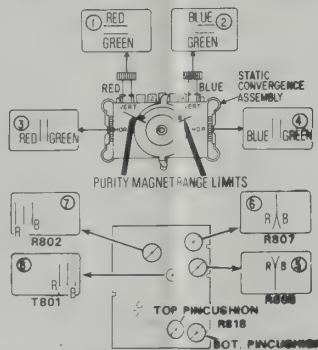
1. No lead should be against a power resistor (2 watts or more).
2. High voltage connections must have no sharp points.
3. The insulation on antenna leads should not be damaged. The leads should not be dressed close to any high voltage point or AC line connection.
4. The AC wiring should be inspected for damaged insulation, frayed wires, pinched leads, or cold solder connections.
5. Inspect the AC line cord for broken or damaged insulation.

AFTER INSTALLING THE CABINET BACK:

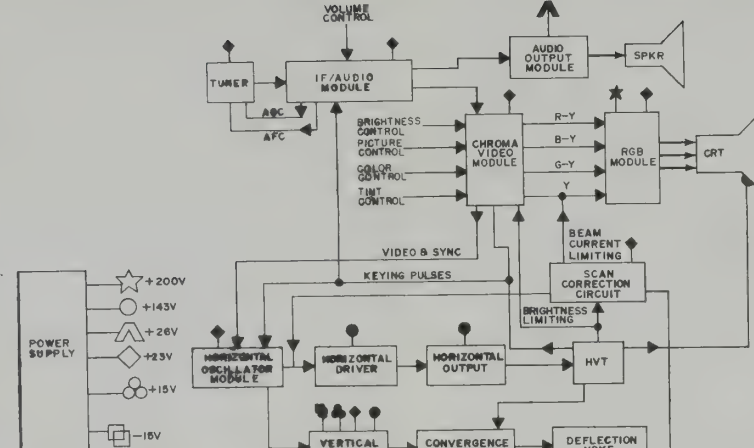
- A. Do not plug the receiver into a power outlet. Connect both blades of the power plug together and place the ON-OFF switch in the ON position.
- B. Measure between the shorted power plug and the following points. Readings should be as indicated.

TEST POINT	MIN. OHMS	MAX. OHMS
ANTENNA TERMINALS - UHF	800K	8.7 MEGS
ANTENNA TERMINALS - VHF	600K	5.7 MEGS
CABINET BACK SCREWS	600K	OPEN CIRCUIT
ALL METAL CONTROL OR CHANNEL SELECTOR SHAFTS (WITH KNOBS REMOVED)		OPEN CIRCUIT
ALL NON-REMOVABLE METALLIC KNOBS, PUSH BUTTONS, EARPHONE JACKS, ETC.		OPEN CIRCUIT
METAL ESCUTCHEONS AND OVERLAYS		OPEN CIRCUIT

IF ANY READING IS OUTSIDE LIMITS SPECIFIED, THE CAUSE SHOULD BE IDENTIFIED AND CORRECTED BEFORE OPERATING THE RECEIVER.

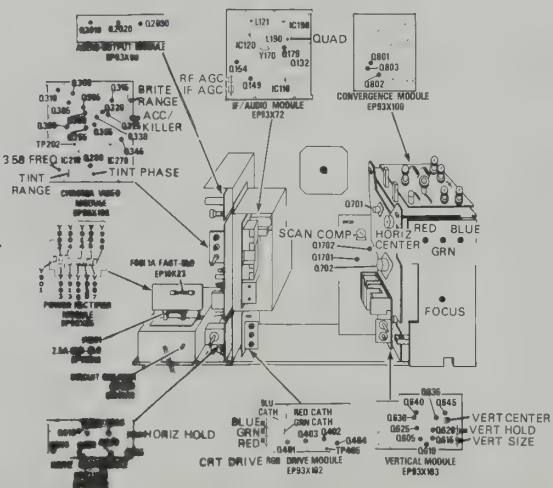


GREEN GUN IS IN THE CENTER AND NEEDS NO CONVERGENCE
CONVERGE RED AND BLUE ON GREEN
CONVERGENCE ADJUSTMENTS



BLOCK DIAGRAM

CHASSIS LAYOUT



SYMPTOM	POSSIBLE CAUSE	CAT.NO.	TROUBLESHOOTING PROCEDURE
No Raster, Sound OK, Circuit Breaker Tripped	- Yoke - Q702 - Vertical Module - R1202 3 Ohm, 5 Watt - R1204 3 Ohm, 5 Watt	EP76X20 EP15X45 EP93X103 EP14X155 EP14X155	1. Set brightness control/picture control to minimum. 2. Unplug PG16 vertical yoke two pin plug and PG800 8 pin convergence plug, reset circuit breaker and apply power. Circuit breaker does not trip - problem in Yoke. 3. If circuit breaker trips, remove Vertical Module, reset circuit breaker and apply power. PG16 and PG800 must remain disconnected. Circuit breaker does not trip - problem in Vertical Module. Circuit breaker trips - problem in Horiz. Output or Damper circuits
No Vertical Sweep or Partial Vertical Sweep	- Vertical Module - R1202 3 Ohm, 5 Watt - R1204 3 Ohm, 5 Watt	EP93X103 EP14X155 EP14X155	Replace Vertical Module. If replacing module did not correct problem, then check R1202 and R1204 with ohmmeter. Resistors are located in low voltage power assembly.
Missing Colors (Abnormal grey scale)	- RGB Module	EP93X102	Turn color gain control to minimum. If grey scale is abnormal, replace RGB module.
Missing Colors (Normal grey scale)	- Chroma/Video Module	EP93X108	Clean module contacts with spray cleaner (EP90X11) then reinsert module. If problem not corrected, replace module.
No Audio or Distorted Audio	- IC190 Audio - IF/Audio Module - Audio Output Module	EP94X2 EP93X72 EP93X99	Substitute IC190, if problem not corrected, clean module contacts with spray cleaner (EP90X11) then reinsert module. If problem not corrected, replace module.
No Sync	- Chroma/Video Module	EP93X108	
Horiz. Sync Problems	- Horiz. Osc. Module	EP93X69	
Excessive or Insufficient Brightness	- Adjust R374 - Brightness Range - RGB Module		Refer to Adjustment Procedure section of mini-manual.
No Color or Intermittent	- R241 Color Killer misadjusted - Chroma/Video Module	EP93X103 EP93X108	Refer to Adjustment Procedure section of mini-manual.
Snow in Picture	- Broken ground on IF Cable at tuner		Solder cable ground to VHF tuner
VIR Color Problems	- Misadjusted - R82 Chroma Set Up - R45 Tint Set Up		Turn VIR switch off. Does set operate normally. If set operates OK, then turn VIR switch on and adjust appropriate set up control, R82 or R45. If problem is not resolved refer to VIR mini-manual

CAT. NO.	SYMBOL	DESCRIPTION
EP14X153	R703	56K, 5%, 2W
ES14X26	R710	75 Ohm, 10%, 5W
EP14X115	R715	430 Ohm, 5%, 2W
EP14X148	R720	1.3K, 10%, 10W
EP62X85	R731	Focus Resistor, 240 Meg.
EP14X162	R901	20 Ohm, 5%, 5W
ES14X53	R1200	2.2 Meg, 10%, 1/2W
EP14X113	R1201	Thermistor-Deausting
EP14X155	R1202	3 Ohm, 5%, 5W
EP14X155	R1204	3 Ohm, 5%, 5W
EP14X55	R1206	40 Ohm, 10%, 3W
EP14X161	R1643	2.7 Meg, 10%, 1/2W

POTENTIOMETERS

EP93X248	R1641	Focus, 11 Meg, 10%
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CAPACITORS

EP18X91	C701	330pf, 20%, 2KV
EP18X137	C702	.015uf, 5%, 1.5KV
EP31X58	C705A	.400uf, 175V
EP31X62	C705B	.400uf, 175V
EP31X37	C1201	100uf, 250V
EP31X37	C1202	100uf, 35V
EP31X37	C1204	100uf, 35V
EP31X42	C1206A	1800uf, 40V
EP31X42	C1206B	1800uf, 40V
EP25X68	C1207	3.5uf, ACPL filled

COILS & TRANSFORMERS

EP64X37	L701	Choke-B Filter
EP64X168	L704	Choke-Horiz. Linearity
EP77X30	T710	Transformer-HVT
EP93X168	T715	Transformer-Pincushion
EP76X20	T820	Deflection Yoke
EP93X65	T1200	Line Choke
EP8X112	T1201	Transformer-Power

DIODES

EP41X10	X200	Crystal, 3.58MHz
EP16X3	Y170	Germanium, Video Detector
EP16X3	Y183	Germanium, 4.5MHz Detector
EP16X3	Y184	Germanium, 4.5MHz Detector
ES16X27	Y200	Silicon, Chroma Burst Gate
ES16X27	Y210	Silicon, Pulse Limiting
ES16X27	Y215	Silicon, Tint Control Bias
ES16X27	Y282	Silicon, Isolation
ES16X27	Y284	Silicon, Isolation
ES16X27	Y290	Silicon, Coupling
ES16X27	Y295	Silicon, Reference
ES16X27	Y345	Silicon, DC Restoration
ES16X27	Y360	Silicon, Picture Control Coupling
ES16X27	Y372	Silicon, Picture Control Coupling
ES16X27	Y380	Silicon, Q380 Bias
ES16X27	Y383	Silicon, Pulse Limiting
EU16X11	Y401	Silicon, Arc Protection
EU16X11	Y402	Silicon, Arc Protection
EU16X11	Y403	Silicon, Arc Protection
EU16X11	Y404	Silicon, Arc Protection
EU16X11	Y405	Silicon, Arc Protection
EU16X11	Y406	Silicon, Arc Protection
ES16X27	Y408	Silicon, Arc Protection
ES16X27	Y504	Silicon, Noise Gate
ES16X27	Y506	Silicon, Noise Gate
ES16X27	Y520	Silicon, Sync Gate
ES16X27	Y525	Silicon, Sync Bias
ES16X27	Y530	Silicon, Horiz. AFC
ES16X27	Y532	Silicon, Horiz. AFC
ES16X27	Y560	Silicon, Horiz. Coupling

TRANSISTORS

EP15X9	Q132	NPN, RF AGC Amplifier
EP15X54	Q149	NPN, 3rd IF
EP15X54	Q154	NPN, 4th IF
EP15X6	Q179	NPN, 1st Video E Follower
EP15X16	Q185	NPN, Audio Output
ES15X90	Q200	PNP, 3.58MHz Amplifier
EP15X1	Q230	NPN, Sideband Amplifier
ES15X90	Q240	PNP, ACC Amplifier
EP15X5	Q280	NPN, Chroma Averaging Amp.
EP15X9	Q282	NPN, R-Y Stabilizing
EP15X9	Q284	NPN, B-Y Stabilizing
EP15X9	Q290	NPN, Brightness Tracking
EP15X1	Q295	NPN, DC Restorer
EP15X5	Q300	NPN, 1st Video Amplifier
EP15X9	Q305	NPN, Chroma E Follower
EP15X9	Q310	NPN, Sync, E Follower
EP15X48	Q315	PNP, 2nd Video Amplifier
EP15X3	Q320	NPN, 3rd Video Df Amp
EP15X5	Q325	NPN, 3rd Video Amplifier
EP15X3	Q330	NPN, 1/2 Video Df Amp
EP15X5	Q335	NPN, 2nd Video E Follower
EP15X6	Q345	NPN, 3rd Video E Follower
EP15X5	Q355	NPN, Picture Control Amplifier
EP15X48	Q360	PNP, Brightness Limiting
EP15X6	Q365	PNP, Brightness Track Amp
ES15X90	Q380	PNP, Blanking Amplifier
EP15X48	Q385	PNP, Brightness Track Amp
EP15X61	Q401	NPN, Blue Output
EP15X61	Q402	NPN, Red Output
EP15X61	Q403	NPN, Green Output
EP15X60	Q404	PNP, Video Driver
EP15X1	Q510	NPN, Noise Gate

*DENOTES ELECTROLYTIC CAPACITORS

CAT. NO.	SYMBOL	DESCRIPTION
EP15X22	Y61	Silicon, Clamping
EP15X22	Y60	Silicon, Bias Coupling
EU16X11	Y65	Silicon, Vertical Damper
EU16X11	Y65	Silicon, Clamping
EP16X11	Y701	Silicon, Damper
EP16X24	Y704	Silicon, Boost
EP57X5	Y710	Silicon, Horiz. Centering
EP57X	Y712	Silicon, Horiz. Centering
EP57X	Y801	Silicon, Convergence
EP57X	Y802	Silicon, Convergence
EP57X	Y803	Silicon, Convergence
EP57X	Y804	Silicon, Convergence
EP57X	Y805	Silicon, Convergence
EP57X	Y806	Silicon, Convergence
EP57X	Y807	Silicon, Convergence
ES16X27	Y810	Silicon, Pincushion
ES16X27	Y811	Silicon, Pincushion
ES16X27	Y813	Silicon, Bias
ES16X27	Y817	Silicon, Bias
EP57X	Y861	Silicon, +143V Rectifier
EP57X	Y902	Silicon, +143V Rectifier
EP57X	Y903	Silicon, +143V Rectifier
EP57X	Y904	Silicon, +143V Rectifier
EP57X	Y905	Silicon, +30V Rectifier
EP57X	Y906	Silicon, +30V Rectifier
EP57X	Y907	Silicon, +15V Rectifier
EP57X	Y908	Silicon, -15V Rectifier
EP57X	Y913	Silicon, +200V Rectifier
EP57X	Y914	Silicon, -15V Rectifier
EP57X	Y915	Silicon, +15V Rectifier
EP57X	Y1210	Silicon, +200V Rectifier
ES16X27	Y1400	Silicon, Beam Limiting
ES16X27	Y1201	Silicon, Beam Current Limiting
ES16X27	Y1703	Silicon, Beam Current Detector

POTENTIOMETERS

EP93X248	R1641	Focus, 11 Meg, 10%
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CAPACITORS

EP18X91	C701	330pf, 20%, 2KV
EP18X137	C702	.015uf, 5%, 1.5KV
EP31X58	C705A	.400uf, 175V
EP31X62	C705B	.400uf, 175V
EP31X37	C1201	100uf, 250V
EP31X37	C1202	100uf, 35V
EP31X37	C1204	100uf, 35V
EP31X42	C1206A	1800uf, 40V
EP31X42	C1206B	1800uf, 40V
EP25X68	C1207	3.5uf, ACPL filled

COILS & TRANSFORMERS

EP64X37	L701	Choke-B Filter
EP64X168	L704	Choke-Horiz. Linearity
EP77X30	T710	Transformer-HVT
EP93X168	T715	Transformer-Pincushion
EP76X20	T820	Deflection Yoke
EP93X65	T1200	Line Choke
EP8X112	T1201	Transformer-Power

DIODES

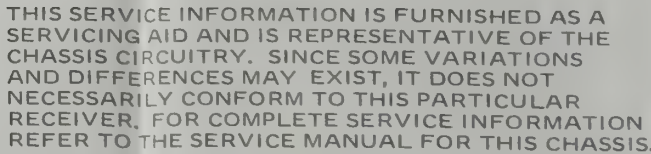
EP41X10	X200	Crystal, 3.58MHz
EP16X3	Y170	Germanium, Video Detector
EP16X3	Y183	Germanium, 4.5MHz Detector
EP16X3	Y184	Germanium, 4.5MHz Detector
ES16X27	Y200	Silicon, Chroma Burst Gate
ES16X27	Y210	Silicon, Pulse Limiting
ES16X27	Y215	Silicon, Tint Control Bias
ES16X27	Y282	Silicon, Isolation
ES16X27	Y284	Silicon, Isolation
ES16X27	Y290	Silicon, Coupling
ES16X27	Y295	Silicon, Reference
ES16X27	Y345	Silicon, DC Restoration
ES16X27	Y360	Silicon, Picture Control Coupling
ES16X27	Y372	Silicon, Picture Control Coupling
ES16X27	Y380	Silicon, Q380 Bias
ES16X27	Y383	Silicon, Pulse Limiting
EU16X11	Y401	Silicon, Arc Protection
EU16X11	Y402	Silicon, Arc Protection
EU16X11	Y403	Silicon, Arc Protection
EU16X11	Y404	Silicon, Arc Protection
EU16X11	Y405	Silicon, Arc Protection
EU16X11	Y406	Silicon, Arc Protection
ES16X27	Y408	Silicon, Arc Protection
ES16X27	Y504	Silicon, Noise Gate
ES16X27	Y506	Silicon, Noise Gate
ES16X27	Y520	Silicon, Sync Gate
ES16X27	Y525	Silicon, Sync Bias
ES16X27	Y530	Silicon, Horiz. AFC
ES16X27	Y532	Silicon, Horiz. AFC
ES16X27	Y560	Silicon, Horiz. Coupling

TRANSISTORS

EP15X9	Q132	NPN, RF AGC Amplifier
EP15X54	Q149	NPN, 3rd IF
EP15X54	Q154	NPN, 4th IF
EP15X6	Q179	NPN, 1st Video E Follower
EP15X16	Q185	NPN, Audio Output
ES15X90	Q200	PNP, 3.58MHz Amplifier
EP15X1	Q230	NPN, Sideband Amplifier
ES15X90	Q240	PNP, ACC Amplifier
EP15X5	Q280	NPN, Chroma Averaging Amp.
EP15X9	Q282	NPN, R-Y Stabilizing
EP15X9	Q284	NPN, B-Y Stabilizing
EP15X9	Q290	NPN, Brightness Tracking
EP15X1	Q295	NPN, DC Restorer
EP15X5	Q300	NPN, 1st Video Amplifier
EP15X9	Q305	NPN, Chroma E Follower
EP15X9	Q310	NPN, Sync, E Follower
EP15X48	Q315	PNP, 2nd Video Amplifier
EP15X3	Q320	NPN, 3rd Video Df Amp
EP15X5	Q325	NPN, 3rd Video Amplifier
EP15X3	Q330	NPN, 1/2 Video Df Amp
EP15X5	Q335	NPN, 2nd Video E Follower
EP15X6	Q345	NPN, 3rd Video E Follower
EP15X5	Q355	NPN, Picture Control Amplifier
EP15X48	Q360	PNP, Brightness Limiting
EP15X6	Q365	PNP, Brightness Track Amp
ES15X90	Q380	PNP, Blanking Amplifier
EP15X48	Q385	PNP, Brightness Track Amp
EP15X61	Q401	NPN, Blue Output
EP15X61	Q402	NPN, Red Output
EP15X61	Q403	NPN, Green Output
EP15X60	Q404	PNP, Video Driver
EP15X1	Q510	NPN, Noise Gate

*DENOTES ELECTROLYTIC CAPACITORS

CAT. NO.	SYMBOL	DESCRIPTION
TRANSISTORS (Continued)		
EP15X9	Q520	NPN, Sync Clip
EP15X8	Q540	NPN, AFC Saw
EP15X1	Q550	NPN, Horiz. R
EP15X1	Q555	NPN, Horiz. O
EP15X9	Q560	NPN, 1/2 Horiz.
EP15X6	Q570	NPN, 1/2 Horiz.
EP15X2	Q605	NPN, 1/2 Vert.
EP15X90	Q610	PNP, 1/2 Vert.
EP15X1	Q615	NPN, Vert. S
EP15X6	Q620	NPN, 1/2 Vert.
EP15X1	Q625	NPN, 1/2 Vert.
EP15X53	Q630	PNP, Vertical
	Q635	PNP, Vertical



VIR MODULE SCHEMATIC DIAGRAM

INFORMATION

ERVICING

will affect color and/or tint when the ON). With this type failure the receiver OFF). When troubleshooting this type

MODULE are capable of disrupting the and manual operation. If you suspect the perform steps 3 and 4 below.

ed.

CE controls. These controls allow slight ase when the receiver is operated in ocedures at the bottom of this page.

nections, cold solder joints, overheated

ect all plugs and connectors to the VIR CTION DIAGRAM). Connect the 3-pin the 3-pin receptacle RL54 (to receiver's eceiver. If normal operation is restored, ay now leave PG53 connected to RL54 eature until you can exchange or repair e catalog number for the VIR MODULE NG THE MODULE, RETURN ONLY O NOT RETURN THE MOUNTING

ITS*

ATCH ON adjust the COLOR PREFER- for desired color amplitude.

CH ON adjust the TINT PREFERENCE red color fleshtones.

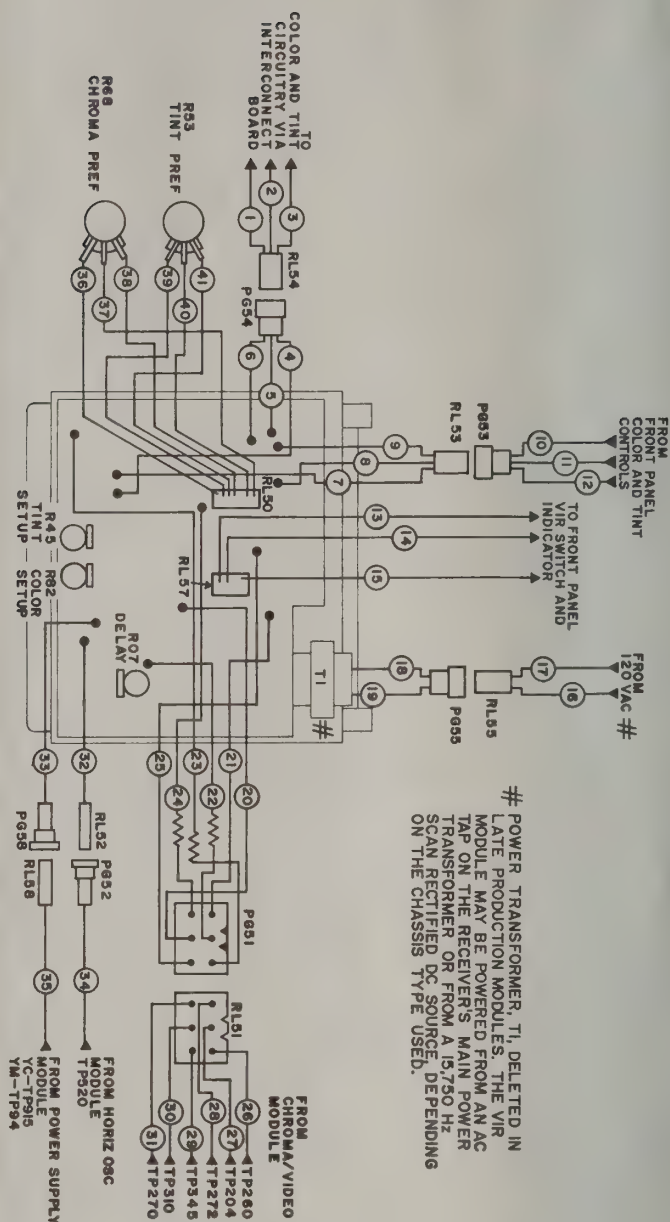
TORY PRE-SET. With the VIR SWITCH REFERENCE set to midrange adjust for ude.

TORY PRE-SET. With the VIR SWITCH REFERENCE set to midrange adjust for ones.

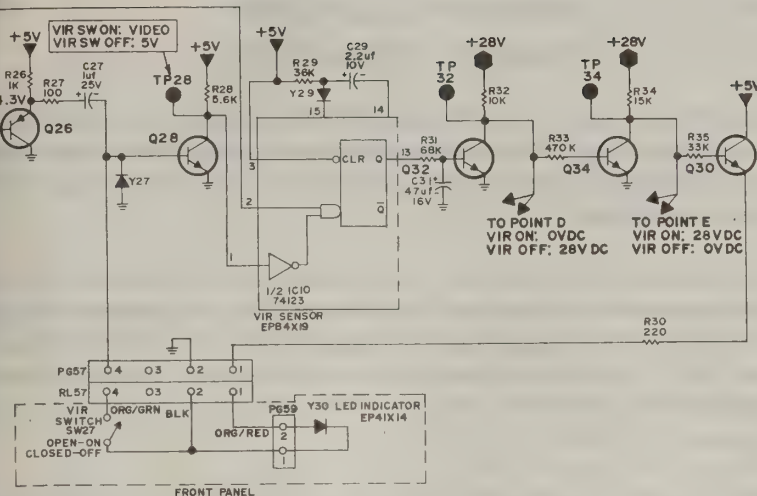
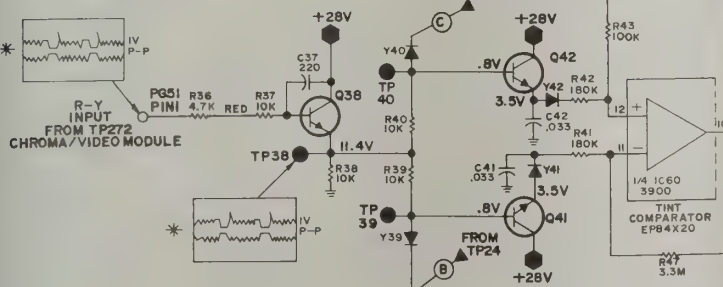
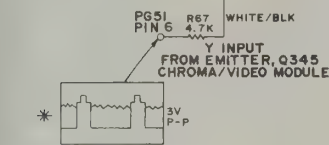
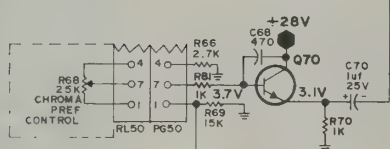
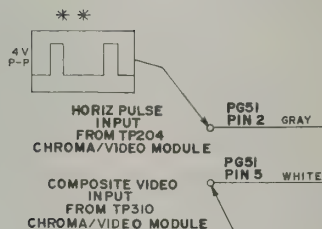
TORY PRE-SET. With the VIR SWITCH AY ADJUSTMENT to center position. ol around the center position until n is achieved.

a VIR signal)

VIR MODULE INTERCONNECTIONS AND WIRE COLOR REFERENCE



- 1 Red/Blue
- 2 White/Brown
- 3 Orange/Yellow
- 4 Orange/Yellow
- 5 White/Brown
- 6 Red/Blue
- 7 Orange/Yellow
- 8 Brown
- 9 Orange/Black
- 10 Red/Blue
- 11 White/Brown
- 12 Orange/Yellow
- 13 Orange/Red
- 14 Black
- 15 Orange/Green
- 16 Black
- 17 Orange/Black
- 18 Brown
- 19 Black
- 20 White
- 21 Black
- 22 Gray
- 23 Red
- 24 White/Black
- 25 Blue
- 26 Black
- 27 Gray
- 28 Red
- 29 White/Black
- 30 White
- 31 Blue
- 32 Black/White
- 33 Red/Green
- 34 Black/White
- 35 Red/Green
- 36 Green
- 37 White/Brown
- 38 White/Green
- 39 Gray
- 40 Red/Blue
- 41 Blue



POWER TRANSFORMER DELETED IN LATE PRODUCTION MODULES. THE VIR MODULE MAY BE POWERED FROM AN AC TAP ON THE RECEIVER'S MAIN POWER TRANSFORMER OR FROM A 15,750 H₂ SCAN RECTIFIED DC SOURCE, DEPENDING ON THE CHASSIS TYPE USED.

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN COMPONENT REPLACEMENT IS MADE IN ANY AREA OF A RECEIVER. THE SHADED AREAS OF THE PARTS LIST AND SCHEMATIC DIAGRAM DESIGNATE COMPONENTS IN WHICH SAFETY CAN BE OF SPECIAL SIGNIFICANCE. IT IS PARTICULARLY RECOMMENDED THAT GENERAL ELECTRIC CATALOGED PARTS BE USED FOR REPLACEMENT OF COMPONENTS WHICH ARE IN THE SHADED AREAS OF THE PARTS LIST AND SCHEMATIC DIAGRAM.

USE OF SUBSTITUTE REPLACEMENT PARTS WHICH DO NOT HAVE THE SAME SAFETY CHARACTERISTICS AS RECOMMENDED IN FACTORY SERVICE INFORMATION MAY CREATE SHOCK, FIRE OR OTHER HAZARDS, OR EXCESSIVE X-RADIATION.

LOG NUMBER EP15X6
LOG NUMBER EP15X48

SELECTED TO BYPASS
R CAN
THE VIR

CE INFORMATION IS FURNISHED AS A
AID AND IS REPRESENTATIVE OF THE
RCUTRY. SINCE SOME VARIATIONS
RENCES MAY EXIST, IT DOES NOT
LY CONFORM TO THIS PARTICULAR
FOR COMPLETE SERVICE INFORMATION
THE SERVICE MANUAL FOR THIS CHASSIS.

VIR MODULE - EP93X101
GENERAL DESCRIPTION

The VIR (Vertical Interval Reference) Module provides the capability of truly automatic color and tint adjustment in this receiver. The module performs this function by detecting and processing a network reference signal on the 19th line of each field of transmitted video information.

The automatic color and tint mode of operation is activated by a front panel switch. When the switch is turned to "VIR ON" and a Vertical Interval Reference signal is being received from the station, the VIR indicator light will come on and the manual COLOR and TINT controls will have no effect. Under these conditions the receiver has the capability to track the color amplitude and phase that is being received from the transmitting station.

Thus, there are two conditions that must occur before automatic operation can be realized. FIRST, THE VIR SWITCH MUST BE "ON". SECOND, THE STATION BEING RECEIVED MUST TRANSMIT A VIR SIGNAL ON LINE 19. Additionally, a reasonably good quality signal without severe interference is required for proper VIR operation. Under extreme fringe conditions or with severe electrical interference more satisfactory reception can probably be achieved with the VIR feature "OFF".

If either of the above conditions is not satisfied, then the receiver will remain in a manual mode of operation and color amplitude and phase will be governed by the settings of the manual COLOR and TINT controls. For example, the VIR SWITCH may be "ON" but if no reference signal is being received, the indicator light will not be illuminated and the receiver will remain in its manual operating mode. (NOTE: The VIR indicator may flash intermittently on unoccupied channels.) Therefore, IT IS OF PRIMARY IMPORTANCE TO DETERMINE WHETHER OR NOT A VERTICAL INTERVAL REFERENCE SIGNAL IS BEING TRANSMITTED BY THE STATION BEING RECEIVED. Check all channels in your reception area. If you are able to obtain automatic operation from any of them, then the receiver is operating normally. (Stations are NOT REQUIRED to transmit the VIR signal.)

When transmitted, the VIR signal can be seen as a YELLOW and WHITE line contained in the blanking bar portion of a normally operating receiver's picture (Fig. 1). You can observe the blanking bar by either decreasing the height, rolling the picture, or both. It might also be possible to call the station and confirm VIR transmission. DO NOT BEGIN TROUBLESHOOTING THE MODULE UNTIL YOU ARE SURE THAT A REFERENCE SIGNAL IS BEING TRANSMITTED BY THE STATION(S) BEING RECEIVED.

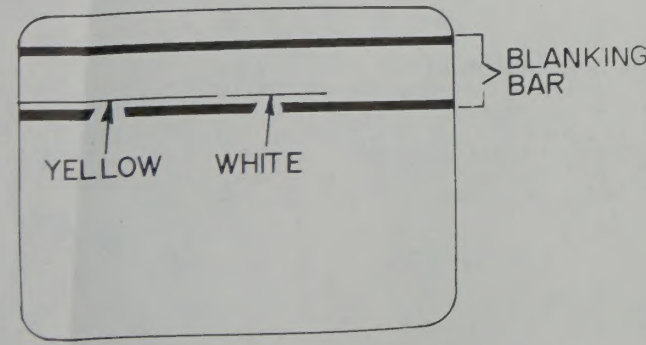


FIGURE 1 APPEARANCE OF VIR SIGNAL

TROUBLESHOOTING INFORMATION
READ BEFORE SERVICING

Most failures occurring on the VIR MODULE will affect color and/or tint when the receiver is operated in the automatic mode (VIR ON). With this type failure the receiver will operate normally in its manual mode (VIR OFF). When troubleshooting this type failure, perform steps 1 through 4 listed below.

Certain other failure conditions on the VIR MODULE are capable of disrupting the receiver's color and video in both automatic and manual operation. If you suspect the VIR MODULE is causing a failure of this nature perform steps 3 and 4 below.

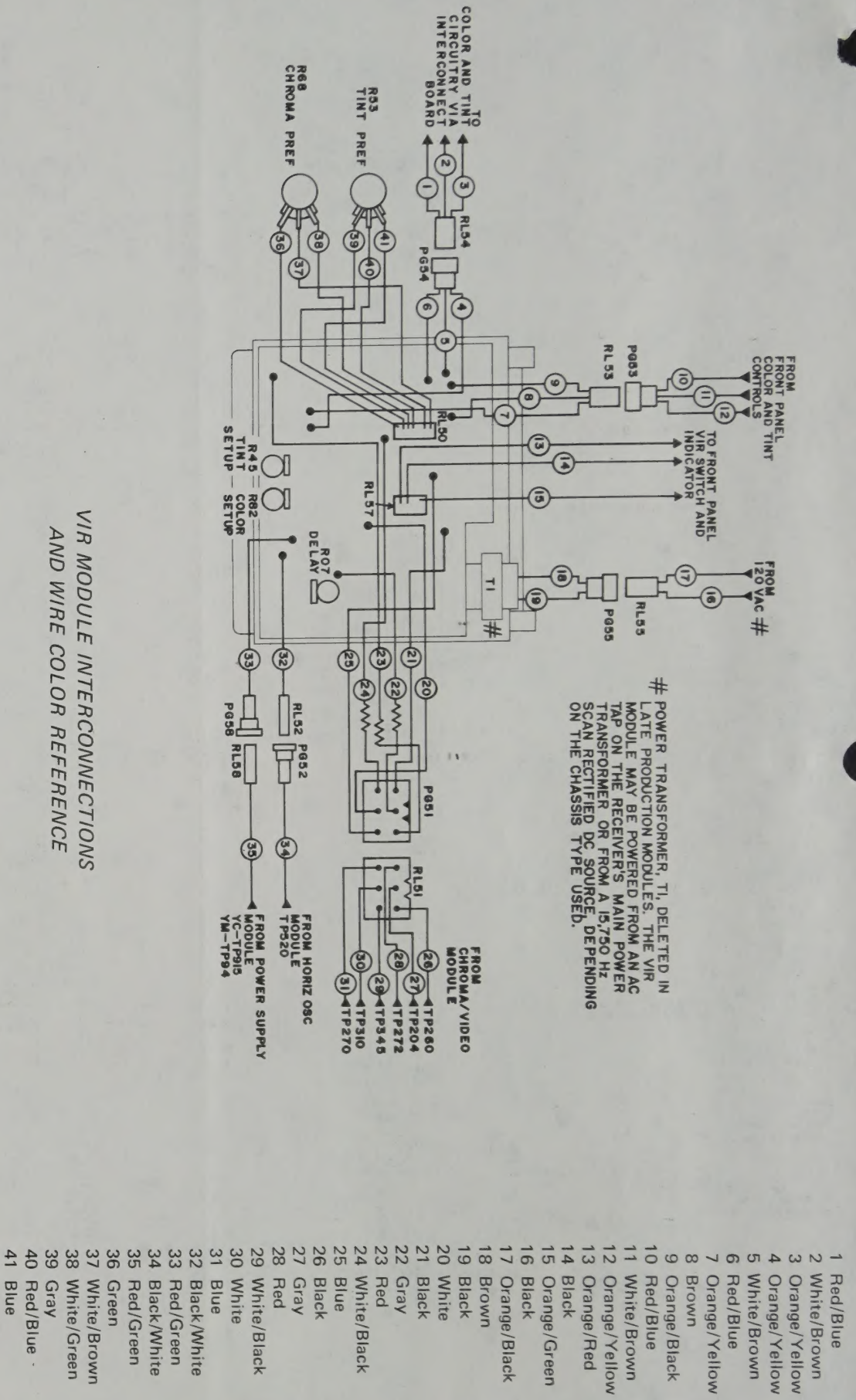
1. Confirm that a VIR signal is being transmitted.
2. Adjust the COLOR and TINT PREFERENCE controls. These controls allow slight adjustment of color amplitude and phase when the receiver is operated in automatic (VIR ON). See adjustment procedures at the bottom of this page.
3. Inspect the module for loose plugs, connections, cold solder joints, overheated resistors, loose wires, etc.
4. Remove power from the receiver. Disconnect all plugs and connectors to the VIR MODULE. (See MODULE INTERCONNECTION DIAGRAM). Connect the 3-pin plug PG53 (from front panel controls) to the 3-pin receptacle RL54 (to receiver's chroma circuitry). Restore power to the receiver. If normal operation is restored, a fault exists on the VIR MODULE. You may now leave PG53 connected to RL54 and operate the receiver without its VIR feature until you can exchange or repair the defective module. The General Electric catalog number for the VIR MODULE is EP93X101. NOTE: WHEN EXCHANGING THE MODULE, RETURN ONLY THE PRINTED CIRCUIT BOARD. DO NOT RETURN THE MOUNTING BRACKET OR POWER TRANSFORMER.

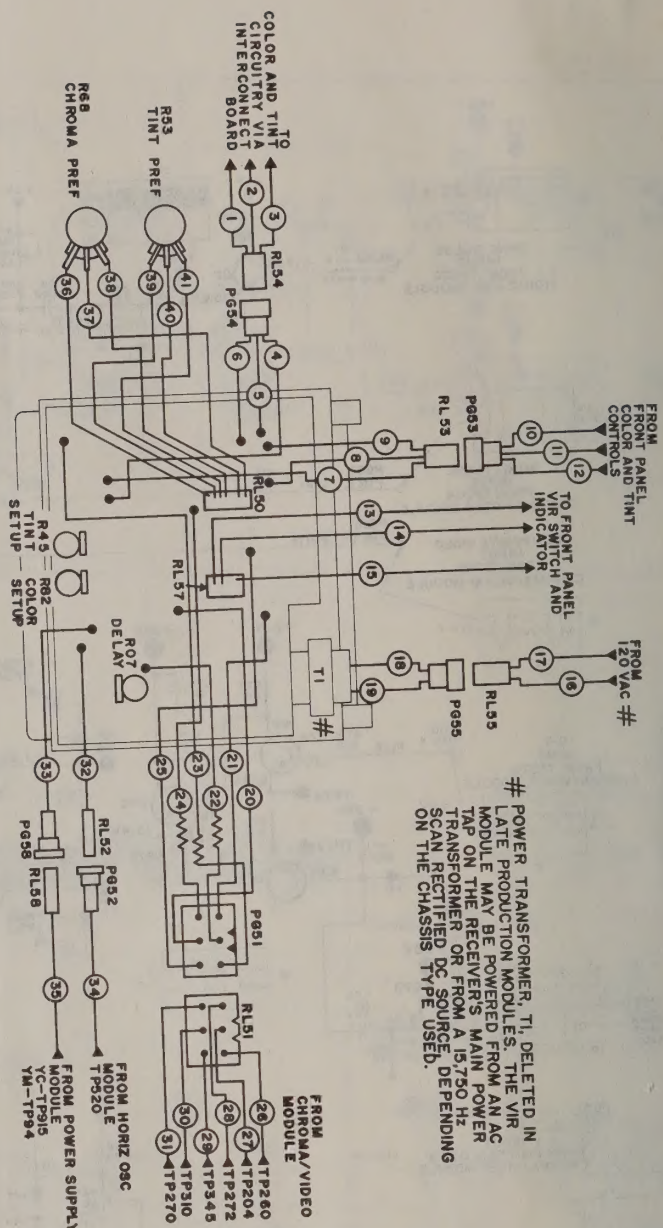
ADJUSTMENTS*

- | | |
|--------------------|---|
| COLOR PREFERENCE | — With the VIR SWITCH ON adjust the COLOR PREFERENCE CONTROL for desired color amplitude. |
| TINT PREFERENCE | — With the VIR SWITCH ON adjust the TINT PREFERENCE CONTROL for desired color fleshtones. |
| COLOR SET UP (R82) | — NORMALLY FACTORY PRE-SET. With the VIR SWITCH ON and COLOR PREFERENCE set to midrange adjust for desired color amplitude. |
| TINT SET UP (R45) | — NORMALLY FACTORY PRE-SET. With the VIR SWITCH ON and TINT PREFERENCE set to midrange adjust for desired color fleshtones. |
| DELAY (R7) | NORMALLY FACTORY PRE-SET. With the VIR SWITCH ON, set the DELAY ADJUSTMENT to center position. "Rock" the control around the center position until automatic operation is achieved. |

*(Set must be receiving a VIR signal)

VIR MODULE INTERCONNECTIONS
AND WIRE COLOR REFERENCE





VIR MODULE INTERCONNECTIONS
AND WIRE COLOR REFERENCE

- 1 Red/Blue
- 2 White/Brown
- 3 Orange/Yellow
- 4 Orange/Yellow
- 5 White/Brown
- 6 Red/Blue
- 7 Orange/Yellow
- 8 Brown
- 9 Orange/Black
- 10 Red/Blue
- 11 White/Brown
- 12 Orange/Yellow
- 13 Orange/Red
- 14 Black
- 15 Orange/Green
- 16 Black
- 17 Orange/Black
- 18 Brown
- 19 Black
- 20 White
- 21 Black
- 22 Gray
- 23 Red
- 24 White/Black
- 25 Blue
- 26 Black
- 27 Gray
- 28 Red
- 29 White/Black
- 30 White
- 31 Blue
- 32 Black/White
- 33 Red/Green
- 34 Black/White
- 35 Red/Green
- 36 Green
- 37 White/Brown
- 38 White/Green
- 39 Gray
- 40 Red/Blue
- 41 Blue

VIR MODULE - EP93X101

GENERAL DESCRIPTION

The VIR (Vertical Interval Reference) Module provides the capability of truly automatic color and tint adjustment in this receiver. The module performs this function by detecting and processing a network reference signal on the 19th line of each field of transmitted video information.

The automatic color and tint mode of operation is activated by a front panel switch. When the switch is turned to "VIR ON" and a Vertical Interval Reference signal is being received from the station, the VIR indicator light will come on and the manual COLOR and TINT controls will have no effect. Under these conditions the receiver has the capability to track the color amplitude and phase that is being received from the transmitting station.

Thus, there are two conditions that must occur before automatic operation can be realized. FIRST, THE VIR SWITCH MUST BE "ON". SECOND, THE STATION BEING RECEIVED MUST TRANSMIT A VIR SIGNAL ON LINE 19. Additionally, a reasonably good quality signal without severe interference is required for proper VIR operation. Under extreme fringe conditions or with severe electrical interference more satisfactory reception can probably be achieved with the VIR feature "OFF".

If either of the above conditions is not satisfied, then the receiver will remain in a manual mode of operation and color amplitude and phase will be governed by the settings of the manual COLOR and TINT controls. For example, the VIR SWITCH may be "ON" but if no reference signal is being received, the indicator light will not be illuminated and the receiver will remain in its manual operating mode. (NOTE: The VIR indicator may flash intermittently on unoccupied channels.) Therefore, IT IS OF PRIMARY IMPORTANCE TO DETERMINE WHETHER OR NOT A VERTICAL INTERVAL REFERENCE SIGNAL IS BEING TRANSMITTED BY THE STATION BEING RECEIVED. Check all channels in your reception area. If you are able to obtain automatic operation from any of them, then the receiver is operating normally. (Stations are NOT REQUIRED to transmit the VIR signal.)

When transmitted, the VIR signal can be seen as a YELLOW and WHITE line contained in the blanking bar portion of a normally operating receiver's picture (Fig. 1). You can observe the blanking bar by either decreasing the height, rolling the picture, or both. It might also be possible to call the station and confirm VIR transmission. DO NOT BEGIN TROUBLESHOOTING THE MODULE UNTIL YOU ARE SURE THAT A REFERENCE SIGNAL IS BEING TRANSMITTED BY THE STATION(S) BEING RECEIVED.

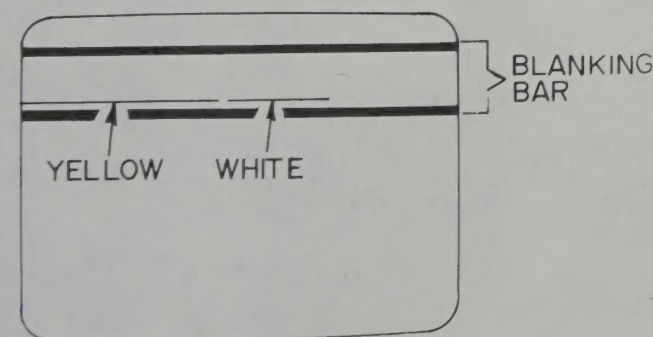


FIGURE 1 APPEARANCE OF VIR SIGNAL

TROUBLESHOOTING INFORMATION

READ BEFORE SERVICING

Most failures occurring on the VIR MODULE will affect color and/or tint when the receiver is operated in the automatic mode (VIR ON). With this type failure the receiver will operate normally in its manual mode (VIR OFF). When troubleshooting this type failure, perform steps 1 through 4 listed below.

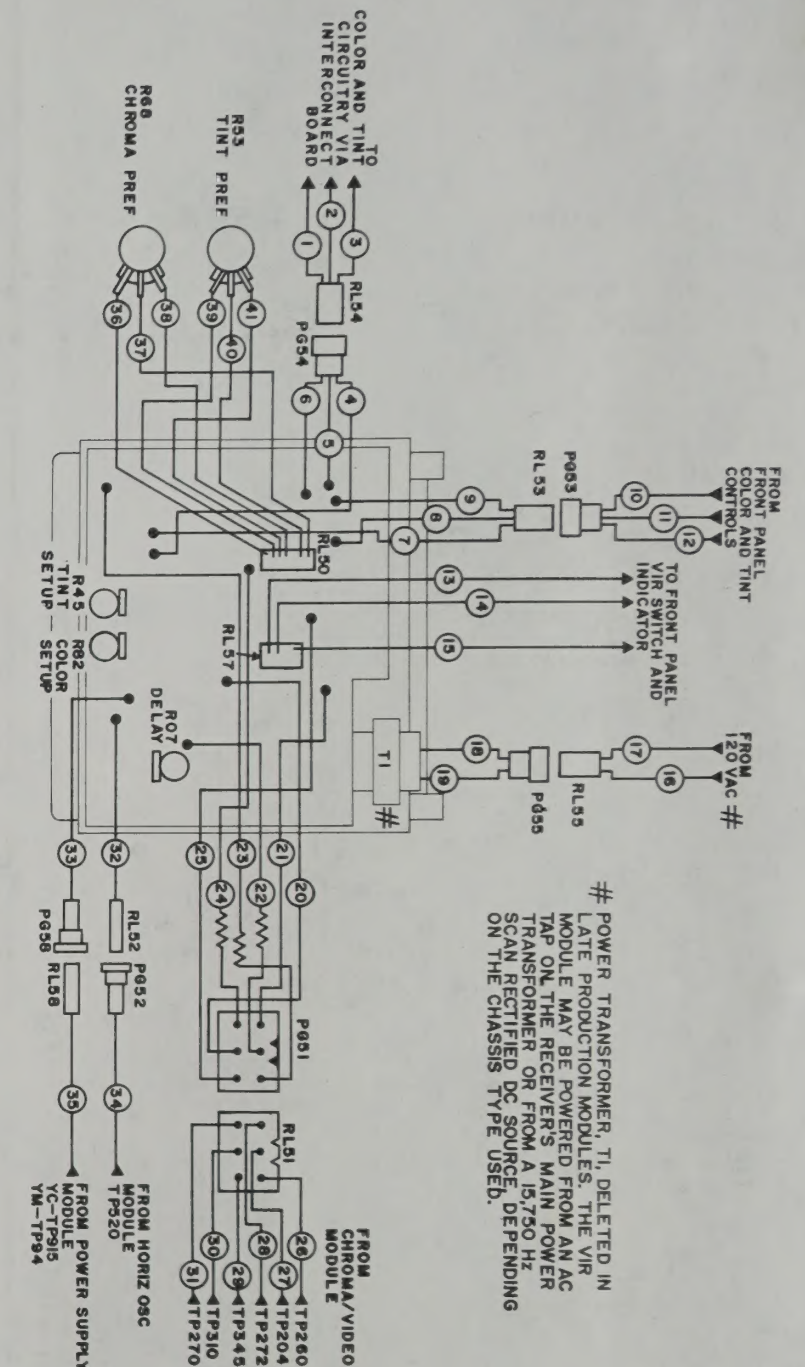
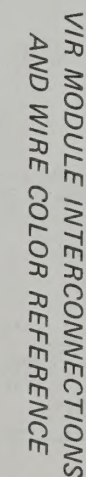
Certain other failure conditions on the VIR MODULE are capable of disrupting the receiver's color and video in both automatic and manual operation. If you suspect the VIR MODULE is causing a failure of this nature perform steps 3 and 4 below.

1. Confirm that a VIR signal is being transmitted.
2. Adjust the COLOR and TINT PREFERENCE controls. These controls allow slight adjustment of color amplitude and phase when the receiver is operated in automatic (VIR ON). See adjustment procedures at the bottom of this page.
3. Inspect the module for loose plugs, connections, cold solder joints, overheated resistors, loose wires, etc.
4. Remove power from the receiver. Disconnect all plugs and connectors to the VIR MODULE. (See MODULE INTERCONNECTION DIAGRAM). Connect the 3-pin plug PG53 (from front panel controls) to the 3-pin receptacle RL54 (to receiver's chroma circuitry). Restore power to the receiver. If normal operation is restored, a fault exists on the VIR MODULE. You may now leave PG53 connected to RL54 and operate the receiver without its VIR feature until you can exchange or repair the defective module. The General Electric catalog number for the VIR MODULE is EP93X101. NOTE: WHEN EXCHANGING THE MODULE, RETURN ONLY THE PRINTED CIRCUIT BOARD. DO NOT RETURN THE MOUNTING BRACKET OR POWER TRANSFORMER.

ADJUSTMENTS*

COLOR PREFERENCE	— With the VIR SWITCH ON adjust the COLOR PREFERENCE CONTROL for desired color amplitude.
TINT PREFERENCE	— With the VIR SWITCH ON adjust the TINT PREFERENCE CONTROL for desired color fleshtones.
COLOR SET UP (R82)	— NORMALLY FACTORY PRE-SET. With the VIR SWITCH ON and COLOR PREFERENCE set to midrange adjust for desired color amplitude.
TINT SET UP (R45)	— NORMALLY FACTORY PRE-SET. With the VIR SWITCH ON and TINT PREFERENCE set to midrange adjust for desired color fleshtones.
DELAY (R7)	NORMALLY FACTORY PRE-SET. With the VIR SWITCH ON, set the DELAY ADJUSTMENT to center position. "Rock" the control around the center position until automatic operation is achieved.

***(Set must be receiving a VIR signal)**



- | | |
|----|---------------|
| 1 | Red/Blue |
| 2 | White/Brown |
| 3 | Orange/Yellow |
| 4 | Orange/Yellow |
| 5 | White/Brown |
| 6 | Red/Blue |
| 7 | Orange/Yellow |
| 8 | Brown |
| 9 | Orange/Black |
| 10 | Red/Blue |
| 11 | White/Brown |
| 12 | Orange/Yellow |
| 13 | Orange/Red |
| 14 | Black |
| 15 | Orange/Green |
| 16 | Black |
| 17 | Orange/Black |
| 18 | Brown |
| 19 | Black |
| 20 | White |
| 21 | Black |
| 22 | Gray |
| 23 | Red |
| 24 | White/Black |
| 25 | Blue |
| 26 | Black |
| 27 | Gray |
| 28 | Red |
| 29 | White/Black |
| 30 | White |
| 31 | Blue |
| 32 | Black/White |
| 33 | Red/Green |
| 34 | Black/White |
| 35 | Red/Green |
| 36 | Green |
| 37 | White/Brown |
| 38 | White/Green |
| 39 | Gray |
| 40 | Red/Blue |
| 41 | Blue |